Adoption of the Internet in Local Sporting Bodies: An Innovation Diffusion Approach

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Abstract

The primary aim of this study was to determine the Internet applications being adopted within local sporting clubs and to determine the adoption factors that affect both local sporting clubs and their members. Within this primary aim, the study examined,

- The areas where Internet applications are being employed;
- The factors that drive the adoption of these Internet applications; and
- An assessment of the impact of these Internet applications on local sporting clubs and their members.

These applications, drivers and impacts are incorporated into a framework of Internet adoption for local sporting clubs. Rogers' (2003) Innovation-Decision Process provided the basis for the framework, which was modified for the study. Rogers' (2003) framework not only provided the initial factors to be considered that affect such adoptions, but also a series of stages which encompass the innovation process.

This study can be considered interpretivist in nature. The research method for this study employed the case study method, involving a number of cases. This approach was chosen as it fits with addressing such a complex phenomena such as those posed by the research case. The conclusions that were drawn from this thesis are based on a set of case studies involving six sporting associations (cricket, hockey and soccer) in three countries (Australia, New Zealand and the UK). Data collection for each case involved a survey of club delegates to determine the level of Internet application adoption and a series of semi-structured interviews to identify the factors that influenced their adoption.

The results of the thesis have suggested differing levels of Internet adoption across associations and Internet applications. The major outcome of this research was that associations are predominately 'worlds to themselves' in that they typically do not communicate or share knowledge with each other. Interviewees were keen to source practical advice to overcome barriers they face, such as gaining knowledge of available Internet applications and how they can assist their clubs. Most of the associations surveyed (barring one association in country Victoria) have adopted email and used it successfully. In relation to club websites, some clubs are struggling to maintain their websites after initially setting them up. Most associations are using their own websites quite efficiently and effectively for providing information and on the whole clubs are accessing these. Online statistics applications are still in the early stages of adoption with the national body in each country having recently set up new online statistical programs (MyCricket, Play England and NZ Online).

Declaration

I, Scott Bingley, declare that the PhD thesis entitled, Adoption of the Internet in Local Sporting Bodies: An Innovation Diffusion Approach, is no more than 100,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

Signed, Date: Monday, 22 August 2011

Scott Bingley

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1.1 Introduction

Millions of people participate actively in sporting clubs in local communities throughout Australia. These people are supported by members (typically volunteers) that provide structure to their activities. Recently, there is evidence that Internet applications[1] are being used in various ways to support these activities.

The primary aim of this study was to determine the Internet applications that are being adopted within local sporting clubs and to determine the adoption factors that affect both local sporting clubs and their members. Within this primary aim, the study examined,

- The areas where Internet applications are being employed;
- The factors that drive the adoption of these Internet applications; and
- An assessment of the impact of these Internet applications on local sporting clubs and their members.

These applications, drivers and impacts are incorporated into a framework of Internet adoption for local sporting clubs. Rogers' (2003) Innovation-Decision Process provided the basis for the framework, which was modified for the study. Rogers' framework not only provided the initial factors to be considered that affect such adoptions, but also a series of stages which encompass the innovation process.

Local sporting clubs are part of the larger group known as Community Based Organisations (CBOs). CBOs as a sector rely heavily on volunteers to support their activities. There are important differences in the manner in which CBOs adopt and use Information and Communications Technologies (ICTs), of which Internet applications are a subset, when compared with private enterprises. These differences were examined as part of this study. In fact, there is a lag in the amount of research conducted in this sector compared to more commercial sectors, especially in relation to their use of ICTs. Very few studies investigate the role of volunteers and how they use ICTs (Boyle, Macleod, Slevin, Sobecka, & Burton, 1993; Madon, 1999; Morgon, 1995). Although there is research examining Internet adoption in general, this cannot necessarily be generalised to small CBOs and their volunteers or in this instance, local sporting clubs and their members. Therefore, more specific research is needed to investigate implications of these significant differences (MacKay, Parent, & Gemino, 2004).

Research into the use of ICTs in sport typically revolves around the improvement of sporting performance, not the business functions that ICTs are used for. This study fills a gap in that it not only extends research into CBOs and volunteers and their use of the Internet, it investigated the particular applications of the Internet that are currently being adopted in local sporting clubs.

1.2 Statement of Significance

Sport provide major benefits for the community and individuals that can include health benefits, social networking, and self esteem improvement.

Sport – and specifically local sporting clubs – play an important role in Australia For instance, in the 2009/10 season there were more than 650,000 participants playing cricket in Australia (Cricket Australia, 2010). Even a less high-profile sport, field hockey, had nearly 230,000 participants (Hockey Australia, 2007). According to the Australian Bureau of Statistics (2006), in 2004 there were 1.5 million persons (which was 9.6% of all persons aged 15 and over) involved in at least one non-

[1] For the purpose of this thesis, Internet applications any application that relies on the transfer of data over the Internet

playing role in organised sport and physical activity. Almost a third of these people were involved in two or more non-playing roles.

Coleman (2002) reports that volunteer managers fulfilled multiple roles within sporting clubs. Within these organisations, team selection and coaching were two of the major roles undertaken by volunteer managers. Junior sports requires even greater support from adult volunteers than senior sport, as parents and adult club members typically volunteer for committee and coaching roles and also manage the logistics of transporting participants to and from training, events and games.

In 2006, 5.2 million (34%) Australians over the age of 18 years were active volunteers, with approximately 713 million hours volunteered by adult Australians (Australian Bureau of Statistics, 2006).

The rate of volunteerism is increasing, from only 24% of Australian adults in 1995 to 34% in 2002. This number rose to 41% in 2005. The most common areas of volunteering were sport and physical recreation (26% of total hours), community/welfare (19%), religion (17%) and education and training (10%) (Australian Bureau of Statistics, 2006).

CBOs find a number of obstructions to the successful use of ICTs and the Internet which make them different to large businesses. CBOs often rely on volunteers for ICT support who may lack the expertise, are not available when needed or ignore important tasks (Ticher, Maison, & Jones, 2002; Mathieson, 2007). They can also suffer from a lack of time to exploit ICTs and lack of capital to fund them adequately (Karanasios, Sellitto, Burgess, Johanson, Schauder, & Denison, 2006). This may significantly affect their usage of Internet applications when compared with regular businesses. The use of the Internet applications by local sporting clubs and their members is increasing and it is important that the factors that effects its adoption, usage and its impacts are understood.

1.3 Research Questions

ICTs and the Internet have given society many the ability to diffuse information, communicate with many people at once, and even process transactions. However, can these advantages be used to assist with the administration roles of volunteers in sporting bodies. The primary aim of this study is to determine the Internet applications that are being adopted within local sporting clubs and to determine the adoption factors that affect both local sporting clubs and their members. The research questions of the study were,

- What are the areas where Internet applications are being employed (Research Question 1);
- What are the factors that drive the adoption of these Internet applications (Research Question 2); and
- What impact do these Internet applications have on the local sporting club and its members (Research Question 3).

The drivers and the impacts of Internet applications were integrated into a research framework of Internet adoption for local sporting clubs. Rogers' (2003) Innovation-Decision Process presented the general framework which was modified for the study.

However, due to an absence of factors available in the literature to explain the adoption of the Internet in local sporting clubs, initial factors will be taken from the literature relating to the adoption of ICTs in businesses, particularly small businesses and CBOs. Similarly, there is little available literature targeting volunteer use of ICTs, so the impacts of ICTs on employees in businesses was be used for the initial version of the framework.

1.4 Research Design

This study can be considered interpretivist in nature. The research method for this study employed the case study method, involving a number of cases. This approach was chosen as it fits with addressing such a complex phenomena such as those posed by the research case. The conclusions that were drawn from this thesis are based on a set of case studies involving six sporting associations (cricket, hockey and soccer) in three countries (Australia, New Zealand and the UK). Data collection for each case involved a survey of club delegates to determine the level of Internet application adoption and a series of semi-structured interviews to identify the factors that influenced their adoption. The adoption model is discussed further in this section.

1.4.1 Adoption Model

There are a number of approaches that can be used to examine the adoption and use of technology. One of the most popular known is the *Diffusion of Innovations*. The theory has been used to conduct research into the adoption of many different innovations and the theory itself has undergone some modifications, with the 5th edition of the book *Diffusion of Innovations* being published in 2003.

The use of Rogers (2003) Innovation Diffusion approach, and the Innovation-Decision Process, has provided an important insight into how technologies are adopted into everyday lives. The theory was introduced by Rogers in the 1960s. It has since been revised a number of times and has been used to describe change in many sectors. The approach provides a general explanation of how new ideas disseminate themselves through social systems over time (Kappelman, 1995; Suraya, 2005).

Rogers (2003) explains the diffusion of an innovation as,

"The process in which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of communication, in that the messages are concerned with new ideas." (Rogers, 2003, p. 5)

According to Rogers (2003), an innovation is

"An idea, practice, or object that is perceived as new by an individual or other unit of adoption" (Rogers, 2003, p. 12).

In fact, Rogers suggests that the idea does not actually have to be new- it only needs to *appear* to be new to the individual. The perceived attributes of an innovation explain the rate of adoption of an innovation. Research into the characteristics of innovations has described the relationship between these characteristics and the adoption of an innovation (Rogers, 2003; Tornatzky & Klein, 1982). These characteristics are (Rogers, 2003; Al-Gahtani, 2003):

- *Relative Advantage*: the degree to which an innovation is perceived to be better that the innovation it has replaced.
- *Compatibility*: the degree in which an innovation is perceived to be consistent with the present socio-cultural values and beliefs.
- *Complexity*: the degree of which an innovation is perceived to be difficult to implement, understand, or use.
- *Trialability*: the degree to which an innovation may be experimented with on a limited basis by an individual.
- *Observability*: the degree to which the results of an innovation are visible to others.

A key component of Innovation Diffusion theory is the Innovation-Decision Process (Rogers 2003). This process is when "an individual passes from gaining initial knowledge of an innovation, to form an attitude towards the innovation, to making a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision" (Rogers 2003, 168).

The steps or stages of the Innovation-Decision Process are, in order of occurrence (Rogers 2003):

1. **Knowledge** - when a decision maker is made aware of an innovation.
2. **Persuasion** - when a decision maker forms an attitude towards an innovation. One of the aspects that can affect these attitudes are the *perceived attributes* of the innovation, which were discussed earlier, but can also be influenced by factors.
3. **Decision** - when a decision maker engages in activities that lead to either choosing the innovation or rejecting it.
4. **Implementation** - when a decision maker puts in place the new innovation.
5. **Confirmation** - when a decision maker wants reinforcement about the decision made to use the innovation. The decision to continue or discontinue use of the innovation is made.

Rogers himself commented that it might be arguable whether the particular stages can be separated from each other, but does suggest that it is probably easier to do for the first three stages (Rogers, 2003). The next section will examine the structure of the thesis.

1.5 Structure of Thesis

This thesis is structured with 11 chapters and three appendix chapters. Chapter One describes the background and the aim of the thesis. The relevant literature relating to the key concepts of Information and Communication Technologies (ICT), Rogers' (2003) Innovation Diffusion Model, community based organisations and volunteerism has been compiled and presented in chapters Two, Three, and Four. Chapter Five outlines the methodology used in this research and Chapter Six provides an overview of the sports investigated as part of the thesis. Chapters Seven, Eight and Nine analyse the data collection for the thesis. Chapter Ten discusses the results and Chapter 11 is the Conclusion chapter. Appendix One contains the actual survey and interview questions used in the study. Appendix Two lists the researcher's publications that are associated with the study.

Chapter Two – Information and Communication Technologies and Organisations

This chapter discusses the role of information within organisations, and how ICTs support these organisations. The chapter then discusses how the ICT needs of larger organisation differ when compared to small organisations, particularly in relation to time, resources, and expertise. The chapter then describes Internet applications and technologies, and the drivers and inhibitors for their adoption. Rogers' theory of Innovation Diffusion (2003), particularly the Innovation-Decision Process is discussed.

Chapter Three – Community Based Organisations

This chapter outlines what community based organisations are, how they interact with the community, and how they interact with the Internet. It then outlines how sporting clubs and their associations are CBOs, and how their members shape their structure and organisational strategy.

Chapter Four – Volunteerism

This chapter defines the roles of a volunteer and their contribution to society. The chapter discusses why people volunteer and the differences between employees and volunteers. It then continues with the impact of volunteers in society.

To conclude, a summary of all the literature review chapters is provided and the initial research framework is introduced.

Chapter Five – Research Methodology

This chapter explains the methodology of this thesis, and the instruments that will be used during the data collection stage. This thesis used a mixture of surveys for collecting data at the association level, and interviews at a club level. The surveys were conducted, where possible, during sporting association club delegates meetings and the interviews were carried out with Club delegates.

Chapter Six – Description of Sports

This chapter explains the sports examined, namely cricket, hockey and soccer, and the scoring system for each sport.

Chapter Seven – Round One of Data Collection within Cricket Clubs

This chapter details the first round of data collection. The Association investigated was the Auckland Cricket Association, based in New Zealand. This chapter was used to test the research framework and refinements to the original framework were made.

Chapter Eight – Round Two of Data Collection within Cricket Clubs

This chapter discusses round two of the data collection. It covers three cricket Associations. The Associations discussed are North Metro Cricket Association (based in Melbourne, Australia), Colac Cricket Association (a rural town of the state of Victoria), and Home Countries Premier Cricket League (located in Stevenage, a rural town in England).

Chapter Nine – Round Three of Data Collection within Hockey and Soccer Clubs

Chapter Nine presents the findings from the other two Associations that were investigated. These were Christchurch Hockey (in a city located in New Zealand) and Geelong Football (soccer) (in a rural town located in the state of Victoria, Australia).

Chapter Ten – Discussion

This chapter discusses the implications of the study results.

Chapter Eleven – Conclusion

This chapter revisited the primary research questions and discussed the practical implications for the sporting bodies. These applications, drivers and impacts were incorporated into a framework of Internet adoption for local sporting clubs. The suitability of the research framework and it general applicability are discussed.

Appendix One – The Survey and Interview Templates

This appendix has the template for the survey and interview questions

Appendix Two – Published Work from this Thesis

This chapter contains the published work from this thesis.

2 Chapter Two – Information and Communication Technologies and Organisations

2.1 Introduction

The following three chapters highlight the relevant literature for this study. The thesis, titled "Adoption of the Internet in Local Sporting Bodies: An Innovation Diffusion Approach", touches on three distinct areas of research. These include Information and Communication Technologies (ICT), Community Based Organisations, and Volunteers.

In this chapter, Information, Information and Communication Technologies, Internet Technologies and their relationship to business is discussed. The first section discusses information, its value, and the attributes. The next section will examine ICTs, and their positive and negative effect on business. There was a shortage of literature about how information affects local sporting bodies and their volunteers, so literature was drawn from how ICTs affect business and employees, and then how it affects Community Based Organisations (CBOs) and their volunteers. Some of the affects ICTs have on employees, for example, information overload and information anxiety are discussed. The discussion on ICT is narrowed to the Internet and its associated benefits and problems. The final section of the chapter introduces adoption theory related to ICTs and discusses Rogers' Theory of Innovation diffusion.

2.2 Information

This section will introduce 'Information', discuss its importance to a business, and its attributes. Access to information is the basic requirement for business creation, growth, and survival. Information is fundamental to the success in any business. Much of a manager's work involves using information to make decisions throughout the day (Diaz, 1997).

Before introducing information, it is necessary to discuss the notion of 'data'. Data is unorganised, raw facts which just exist in the world (Behan & Holmes, 1986). As According to Ackoff (1989, p.3), *"Data is raw. It simply exists and has no significance beyond its existence (in and of itself). It can exist in any form, usable or not. It does not have meaning of itself. In computer parlance, a spreadsheet generally starts out by holding data".*

Data has to be processed in some manner to become information. Gelinas et al. (2004) described information as,

"Data presented in a form that is useful in a decision-making process activity" (Gelinas, Sutton, & Fedorowicz, 2004, p. 16)

In addition, Turban, Leidner, McLean & Wetherbe (2006) has described information as,

"Data that (has) been organised so that it has meaning and value to the recipient" (Turban, Leidner, McLean, & Wetherbe, 2006, p. 730)

Galliers (1987) defines information as,

"A collection of data which, when presented in a particular manner and at an appropriate time, improves the knowledge of the person receiving it in such a way that they are better able to undertake a particular activity or to make a particular decision" (Galliers, 1987, p. 11)

However Davenport and Prusak (1997) argue the idea of data and information are not clear cut and there are grey areas to this terms. The purpose of giving data meaning is a very subjective process, and must be meaningful for business (Davenport & Prusak, 1997).

2.2.1 Value of Information

One way to measure the 'value of information' to an organisation is to calculate the financial benefit of the information. For example, improved stock procedures after using inventory information to keep track of inventory (Bocij, Chaffey, Greasley, & Hickie, 2006). A simple formula has been devised by Bocij et. al (2006) to determine the benefit of information,

Benefit of Information = Value of Information –Cost of Gathering that Information

There are intangible benefits to information as well. This occurs when the owner of information has difficulty (or it is impossible) to determine the value of information. An example might be the value of decisions made based on the information provided by an information system (Bocij, Chaffey, Greasley, & Hickie, 2006). Such a formula might appear as,

Benefit of Information = Improvements in Decision Behaviour – Cost of Gathering that Information

Improved information can enhance decision making, however with a large amount of other factors typically contributing to a decision, it is impossible to quantify exactly *how much* it has helped (Bocij, Chaffey, Greasley, & Hickie, 2006).

2.2.2 Communication of Information

According to Bocij et. al (2006), information can be communicated in two forms, via informal and formal communication.

Informal communication is present in all organisations. Informal communications are not transmitted in a consistent way. The most common method of information exchange is through word of mouth. An example might be in a sales organisation, where a sales representative and a client might discuss a product and a new way that it might be used or modified. If this information is not formally recorded, business managers may not have access to it for decision making. Informal communications usually offer a high degree of flexibility with more choice on how the information is presented. However this information might contain inaccuracies, and may not be totally relevant (Bocij, Chaffey, Greasley, & Hickie, 2006). There has been widespread use of informal communication on the Internet (Kraut, Mukhopadhyay, Szczypula, Kiesler, & Scherlis, 2000; Stafford, Kline, & Dimmick, 1999; Debrand & Johnson, 2008; Sproull & Kiesler, 1991). I

Formal communications are always transmitted in a consistent manner. For example, a company report will use the same basic format so that readers can locate information quickly. These formal communications are more structured in their form of presentation and are also more likely to present the information in a more comprehensive manner (Bocij, Chaffey, Greasley, & Hickie, 2006). However, there are a number of disadvantages to formal communications. They are often structured in relation to the information they provide, and therefore can be limited in their content, form and type. Formal communications do not include input from informal communications, and therefore this information may be overlooked in the decision making processes (Bocij, Chaffey, Greasley, & Hickie, 2006).

2.2.3 Attributes of Information

According to Lee and Strong (2004), information can have a number of different characteristics. Bocij et. al (2006) summarise the key qualities under headings of *time*, *content*, and f*orm*, to which might be added additional features like confidence, and reliability. Bocij et. al (2006) describe the concept of 'attributes of information quality' as "…a group of characteristics by which the quality of information

can be assessed, normally grouped in categories of time, content and form*"* (Bocij, Chaffey, Greasley, & Hickie, 2006, p. 11).

Some of these are addressed further in the remainder of this section.

The *time* attribute describes the time period that the information deals with, or the frequency in which the information is received. The *content* attribute describes the scope and contents of the information. The *form* attribute describes how the information is presented to the recipient (Bocij, Chaffey, Greasley, & Hickie, 2006). Additional attributes include *confidence in the source*. Recipients are more likely to accept information if they can trust the source, and it has been accurate and reliable in the past. Thus, another important attribute is *reliability*. It could be argued that a recipient should be able to rely in information being available when required and that information will be of a consistent quality in terms of the other attributes already stated (Bocij, Chaffey, Greasley, & Hickie, 2006).

Bocij et al. (2006) also separated information into 'good' and 'bad' information. The differences in whether information is 'good' or 'bad' can be identified by whether it has some, or all, of the 'attributes of information quality'.

Summary

The widespread use of computer technologies now can generate information much faster than before, and this information can ne communicated formally or informally. (Bocij, Chaffey, Greasley, & Hickie, 2006). This section identified the dependences of business on information, and how this information is generated from data captured by businesses. Further to this, Bocji et al. (2006) discussed the attributes of information quality.

The next section discusses Information and Communication Technologies (ICTs).

2.3 Information and Communication Technologies

Information and Communication Technologies, also known as Information Technologies (IT), can be defined as,

"Any hardware, software, or communications technology that might be adopted by an organisation to support or control a business process, enable management decisions, or provide a competitive advantage." (Gelinas, Sutton, & Fedorowicz, 2004).

Cohen, Salomon, & Nijkamp (2002) define a ICTs as,*"*... a collection of technologies and applications which enable electronic processing, storing and transfer of information to a wide variety of users or clients."(Cohen, Salomon, & Nijkamp, 2002, p. 34)

Both of these definitions incorporate the use of technology to support the needs of the organisation, or the individual. The Cohen et al. (2002) definition highlights the important relationship between ICTs and information. The Internet, and Internet applications are a subset of ICTs, and will be discussed later in this chapter.

ICT applications can be divided into four categories depending on the type of information they provide. The ICDT framework, developed by Angehrn (1997), is a systematic approach for classifying business related ICT strategies. The framework is made up of four 'spaces': Information space, Communication space, Distribution space, and Transaction space.

The Information space consists of channels by which organisations can communicate information about themselves, and the products or services they provide, like their name, contact details and

location. The Communication space allows organisations to exchange information with other stakeholders, like suppliers, and customers. An example of this is email communication, and/or online forums. The Distribution space is a channel that allows downloading of digitised products, such as software or music, online. The last space is the Transaction space. This allows customers to interact with an organisation's software to generate output automatically, with no involvement of personnel from the organisation (Angehrn, 1997). Table 1 categorises different ICT capabilities and presents them in the ICDT framework.

ICDT Framework	Major Capabilities of Information Systems
Information Space	-Store huge amounts of information in an easy-to-access, yet small space. -Allow quick and inexpensive access to vast amounts of information worldwide. - Vividly present information that challenges the human mind.
Communication Space	-Enable communication and collaboration anywhere, any time. -Provide fast, accurate, and inexpensive communication within and between organisations. -Increase the effectiveness and efficiency of people working in groups in one place or in several locations. - Facilitate work in hazardous environments.
Distribution Space	-Can be wireless, thus supporting unique applications anywhere.
Transaction Space	-Perform high speed, high volume, and numerical computations. -Automate both semiautomatic business processes and manual tasks. -Facilitate interpretation of vast amounts of data. -Facilitate global trade. -Less expensively done than when done manually

Table 1 - Different ICT Capabilities and the ICDT Framework (Angehrn, 1997)

Note the emphasis in Table 1 on improvements generated to the use of ICTs in relation to time, content, and form aspects of information (key attributes of information identified in section 2.2.3).

2.3.1 Benefits of Information and Communication Technology

ICTs are capable of easing information problems within the business sector (Diaz, 1997). ICTs can affect society in beneficial ways. This section will discuss some of the key benefits of ICTs.

Globalisation

Globalisation is the,*"* elimination of geographic barriers that separate individuals, organisations, and societies*"* (Turban, Leidner, McLean, & Wetherbe, 2006, p. 729)

A version of a society in which people are all networked and connected, communicating, and cooperating for the common good, may seem like a good idea. Some poorer countries that do not have wide access to ICTs are in danger of falling into isolation and exclusion from global developments (Lelliott, Pendlebury, & Enslin, 2000).

However, ICTs can assist in a more efficient allocation of human resources by removing the problems caused by geographical boundaries. Companies can benefit from lower employee costs by outsourcing 'back end tasks' (such as transaction processing) to developing countries (Turban, Leidner, McLean, & Wetherbe, 2006).

Growth

ICTs are increasingly considered as one of the main contributors to high economic growth rates at national levels (Ciarli & Rabellotti, 2007; van Riel, Lemmink, & Ouwersloot, 2004). During the

1990s, the earlier, faster and widespread adoption of ICTs through firms and households was deemed as one of the major explanations for high growth rates of the United States and some countries in Europe (Bassanini & Scarpetta, 2002; Daveri R. , 2002). ICTs have become the major facilitator for business activities in the world today (Dickson & DeSanctis, 2001; Huber, 2004; Tapscott, Lowi, & Ticoll, 2000).

The growth of nations through the use ICTs has been demonstrated in a study that compared the United States and Europe with Gross Domestic Growth (GDP), and productivity generated by ICTs and ICT industries. The study showed that the United States not only benefited from ICTs, but the evidence suggested that Europe was lagging in this respect (van Ark, Inklaar, & McGuckin, 2003). A number of studies (Colecchia & Schreyer, 2002; Daveri F. , 2001; Daveri F. , 2002; Timmer, Ypma, & van Ark, 2003; van Ark, Melka, Mulder, Timmer, & Ypma, 2002) suggested that slower rates of ICT investment were an important factor in poorer European productivity performance.

Low Cost and Business Efficiencies

Many of the activities that ICTs generally perform are repeated regularly, or periodically, such as daily, weekly or monthly. The use of ICTs has a long history of cutting costs and raising output by automating basic, repetitive tasks (Shang & Seddon, 2002). Investment in ICTs can streamline processes, and automate transactions. They can also provide benefits by substituting labour, speeding up processes, and increasing output (Morrison & Berndt, 1990; Weill, 1990; Blackburn, 1991; Smith F. , 1991; Brynjolfsson & Hitt, 1996; Lichtenberg, 1995; Weill & Broadbent, 1998). Hollensteina (2004) suggested that ICTs can facilitate communication among employees and reduce co-ordination costs, speed-up internal processes and lower transaction costs by streamlining relations with suppliers of materials, labour, capital and technology.

Added Value

ICTs can be used to add value to product and services of a business. The most common way to do this is to uses ICTs to assist in producing a unique or differentiated product. ICT can make it possible to customise products (Porter & Millar, 1985). An example of adding value to a product or service is to match it to customer requirements – such as using ICTs to automatically store information about the special requirements of a customer, such as vegetarian meals (Burgess, Sellitto, & Karanasios, 2009).

The next section will discuss some of the key problem that relate to ICT use.

2.3.2 Problems with Information and Communication Technology

ICTs have reformed and shifted the way organisations carry out their business. The issue of new technology and its impact on individuals is not new. As early as the 1830s, English philosophers expressed arguments about how the effect of new technologies had given rise to the Industrial Revolution. (Turban, Leidner, McLean, & Wetherbe, 2006). In the 1872 book titled *Erehwon,* (Butler, 1872) summarises the anxiety about the disruptive influence of technology on the lives of people. Since the Industrial Revolution, and on to the current age, many people still believe that mankind is threatened by the evolution of technology. Although society has embraced technology for the most part, there still needs to be an awareness of the effects that technology has on individuals, and as members of organisations and society (Turban, Leidner, McLean, & Wetherbe, 2006).

Digital Divide

The ‘Digital Divide’ is

*"*The gap in computer technology in general and in Web technology in particular between those who have information technology and those who have not." (Turban, Leidner, McLean, & Wetherbe, 2006, p. 727)

According to the United Nation, more than 90% of all Internet hosts were in developed countries, which make up only 15% of the world's total population (United Nations, 2007). Venkat (2002) stated that the digital divide has consistently followed the income divide all over the world.

The California Public Utilities Commission released a report in 2005 stating,

"That although California leads the nation in deployment of broadband services and usage, the state should consider policies to ensure broadband becomes available in the rural areas, and to lower-income communities." (Telecommunications Reports, 2005, p. 2)

The major problem identified was 'connecting the last mile'. The last-mile hurdle relates to connecting the areas that include difficult topography, issues with government permits and licenses, as well as economic challenges caused by low population density and distance from major population centres. This relates to the very rural businesses that by their very nature have to occupy vast areas, like sheep and cattle farmers.

Spam

Having fast Internet at low cost might not always be pleasant due to the introduction and increase of 'information noise'. Spam is, *"*...the practice of indiscriminately broadcasting unsolicited messages via e-mail and over the Internet*"* (Turban, Leidner, McLean, & Wetherbe, 2006, p. 698)

Prior to the commercialisation of the Internet in the mid 1990s, the Spam problem was quite limited. Unsolicited messages mostly consisted of prankster and chain letters (Cranor & LaMacchia, 1998). In June 2009, spam reached 180 billion emails of total emails sent per day (Yegenian & Dimitriou, 2010). With the cost of handling this spam costing as much as $130 Billion (These costs are borne by the email receivers and the enterprises in the form of lost productivity and/or taxing the network for unproductive bandwidth) (Yegenian & Dimitriou, 2010).

Information Overload

Information is so readily available, at such high speed, and is very inexpensive, that people are complaining about information overload (Shapiro & Varian, 1998). In the last three decades, more information has been produced than in the last five millennia (Nelson, 1994). Over 9,000 periodicals were published in the United States each year, and almost 1,000 books were published every day around that world (Hubbard, 1987). The concept of 'Information Overload' in simple terms, is the notion of 'receiving too much information' (Eppler & Mengis, 2004). Research across various disciplines has found that performance (the quality of the decisions applied) has a positive correlation to the information they receive; to a certain point (Eppler & Mengis, 2004). If more information is supplied past this point, the performance of the individual will decline significantly (Chewning & Harrell, 1990). Information supplied past this point will no longer be integrated into the decision making process, and information overload will result (O'Reilly, 1980). Impacts on Health and Safety

Computers and Information Systems, which are part of organisations, may have an adverse effect on peoples' health and safety. Some of the issues people suffer from include, but not limited to, job stress, eye strain from video display terminals, repetitive strain (stress) injuries, and long term use of the keyboard (Turban, Leidner, McLean, & Wetherbe, 2006).

Dehumanisation and Other Psychological Impacts

A frequent problem with ICTs is that it is impersonal in nature and its potential to dehumanise and depersonalise activities that have been computerised. (Gustafsson, Dellve, Edlund, & Hagberg, 2003). Many people feel they are 'just another number' because computers remove the human element that was present in non-computer systems. The Internet threatens to continue this problem. If people are encouraged to work and shop online, they can develop psychological troubles, such as loneliness and even depression due to a lack of human contact (Turban, Leidner, McLean, & Wetherbe, 2006).

The next section discusses the Internet that is an important focus of this thesis and can be considered a subset of ICT.

2.4 The Internet

The Internet has its origins back in the 1960s as a research and academic network, and its growth in the 1990s was characterised as a revolution (Lin N. , 2001). In the 1990s, the Internet was about the provision of the information, and information has become 'freer' and more available than ever before (Lin N. , 2001). The Internet has continued to evolve, and provides a new means of interpersonal communication. Anyone with an Internet communication can communicate with anybody online(Ferlander, 2003).

The Internet is *"*...a worldwide collection of interconnected networks*"* (Nickerson, 2001, p. 19) or *"*... an association of computer networks with common standards which enable messages to be sent from any registered computer (or host) to another*"*.(Crystal, 2006, p. 3)

The Internet is a communication platform with the potential to produce a positive social impact for individuals (McKenna & Bargh, 2000), communities (Wellman, Quan, Witte, & K, 2001), organizations (Sproull & Kiesler, 1991), and society in general (Hiltz & Turoff, 1978).

The Internet now can be categorised into four 'spaces', not just information and communication provision. The next section discusses these 'spaces'.

2.4.1 Information, Communication, Distribution, and Transactions

The ICDT (Information, Communication, Distribution, and Transaction) framework can be used to classify types of Internets channels as well. This model can be transferred to the Internet, and more directly, websites. The Information space is the area of greatest activity for the Internet, in which companies can setup a 'homepage' and allow global reach and the ability to provide rich information (Leong, 1998). The communication in the Communication space can be sent and received. The Internet allows for the exchange of communication at high speed, and low cost, which crosses physical and geographical bounties. This can be carried out via email. The Distribution space on the Internet has organisations have their digitised products downloaded online. These products include software and music. The last space, Transactional space, allows organisations to buy and sell their products online (Leong, 1998).

2.4.2 Benefits of the Internet

Organisations are increasingly using the Internet to carry out business. In North America with an estimated 272 million home Internet users in 2011, more than doubling the amount of the 2000 figure of 108 million (Nielsen, 2011)..

Low Cost and Business Efficiencies

One of the most commonly realised benefits of the Internet is the potential for improvements in operational efficiency (Papazoglou & Ribbers, 2006). In using Internet applications, organisations can

interact with trade partners, streamline internal business processes through their computer networks (Dutta & Segev, 1999), and increase their effectiveness at the same time (van Slyke & Belanger, 2003).

With the increase use of broadband technology, secure networks and mobile computing, the growth in Telecommuting, or working out of the office, has continued to grow. Some of the benefits of Telecommuting are quite clear; it lowers the employers' real estate expenditure, offers greater flexibility to the employee, and reduces the amount of commuting time (Turban, Leidner, McLean, & Wetherbe, 2006). However, there are distinctive demands on an employee that works at home. Telecommuting requires the discipline, initiative, and energy to accomplish work in such an informal setting (Garrett, 2003).

Globalisation

Internet applications can provide the stepping stone into reaching new markets. E-commerce helps organisations access new customers from around the world where organisational and geographic boundaries were previously thought to be too distant or impractical (Papazoglou & Ribbers, 2006; Rayport & Sviokla, 1995).

Improved Communications, Information, and Knowledge Sharing

The Internet can be an important tool for improved communicating and sharing information., Strangelove (1994) notes that,

"The Internet is not about technology, it is not about information, it is about communication – people talking with each other, people exchanging e-mail… The Internet is mass participation in fully bidirectional, uncensored mass communication. Communication is the basis, the foundation, the radical ground and root upon which all community stands, grows and thrives. The Internet is a community of chronic communicators." (Strangelove, 1994, p. 11)

Internet applications can assist with numerous objectives, such as enriching the communication with customers (Kenny & Marshall, 2000), and developing deeper relationships with key suppliers (Kaplan & Sawhney, 2000; Wise & Morrison, 2000).

Having key suppliers aligned with an organisation's internal strategies can help exploit their expertise and knowledge in creating value of products and services (Papazoglou & Ribbers, 2006).

One of the significant features of the modern organisation is the ability to collaborate. Collaboration refers to,

"Mutual efforts by two or more individuals who perform activities in order to accomplish certain tasks. The individuals may represent themselves or organisations, or they may be members of a team or a group. Group members work together on tasks ranging from designing products, to teaching each other, to executing complementary subtasks. Also people work with customers, suppliers, and other business partners in an effort to improve productivity and competitiveness." (Turban, Leidner, McLean, & Wetherbe, 2006, p. 108)

These individuals all need to collaborate in order to carry out their roles, technology can be supported electronically by several technologies. Virtual collaboration refers to the,

"Use of digital technologies that enable organisations or individuals to collaboratively plan, design, develop, manage and research products, services, and innovate ICT and e-commerce applications." (Turban, Leidner, McLean, & Wetherbe, 2006, p. 110)

There are a number of studies that suggest (Line56.com, 2002) that collaboration is a set of relationships that can bring significant improvements in organisations' performance. Some of the major benefits of collaboration are cost reduction, increase revenue and improved customer retention (Turban, Leidner, McLean, & Wetherbe, 2006).

The next section will discuss some of the key problem that relate to Internet use.

2.4.3 Problems with the Internet

The main inhibitors of the Internet, and e-commerce adoption include uncertainly of the financial benefits, lack of a clear e-commerce strategy, technological concerns, security concerns, privacy and legal issues, suspicion regarding new partnership loyalties, and the high cost of computing technologies (Papazoglou & Ribbers, 2006). The next section discusses Internet and e-commerce inhibitors.

Security and Trust Issues

One of the biggest concerns for businesses who trade over the Internet is the potential for theft of business information and funds, and alteration of financial documents, as well as the potential for illicit transactions and concerns over payment security (Papazoglou & Ribbers, 2006). Potential losses due to ineffective network security can compromise an entire organisation network, which is why security methods and procedures must be build into the e-commerce adoption plan. Another important barrier is the level of trust an organisation is willing to place within businesses selling goods and services on the Internet (Papazoglou & Ribbers, 2006). Trust can be defined as the expectation that the trading party will behave in accordance with its commitments, negotiate honestly, and not take advantage even when the opportunity arises (Hosmer, 1995). Trust is a dynamic concept which changes over time. The level of trust companies are willing to engage to with another trading partner may change over time as they become more familiar with the other party through experience and other knowledge (van Slyke & Belanger, 2003).

Legal Issues

The most important legal issue hampering the growth of e-commerce is still the lack of awareness (Papazoglou & Ribbers, 2006). A modest amount of companies are familiar with the rules and regulations that apply to the Internet. From an organisational perspective, the concept of legal barriers is a highly subjective concept, reflecting the view point of what might constitute a barrier to market access in the wider sense (Commission of the European Communities, 2004). There are many differences that still exist between nations in terms of legal provisions that are applicable to e-commerce. These are considered barriers by organisations, as internal markets raise legal uncertainties and harbour compliance costs (Papazoglou & Ribbers, 2006).

Digital Divide 2.0

Much of the documentation about the digital divide is based around the 'haves' and 'have nots' of the world with regard to the Internet and technological attainment. Another level of digital divide is emerging with the difference in online skills (Hargittai, 2002). As people start to use the Internet for communication and information access, it becomes less useful to look at the binary classification of who is online when discussing the question of inequality (DiMaggio & Hargittai, 2001)

Hargittai (2002) tells us that,

"The ability to find different types of information online allows people to use the medium to their maximum benefit. If users often give up in frustration and confusion then merely having access does

not mean that a digital divide has been solved because a divide remains in their capacity for effective use of the Internet" (Hargittai, 2002, p. 3).

Information anxiety can take many forms, from frustration with the inability to keep up with information, to the quality of information available on the Internet (either incomplete or not up-to-date), to the frustration or guilt about not being better informed or informed too late. Another form stems from information overload (which was discussed earlier). Information Anxiety can affect some Internet users to the extent that it results in poor, or inadequate, sleep (Turban, Leidner, McLean, & Wetherbe, 2006).

Summary

From the literature presented earlier, the use of Internet Technologies and e-commerce and the impacts it has on businesses and individuals is compelling. There are many benefits that both ICTs and the Internet share, these include globalisation, low cost and business efficiencies. However, they also share some of the negative effects, such as the Digital Divide, and dehumanising impacts.

Table 2 - Impacts of ICTs and the Internet on Organisations and Individuals

Benefits	ICTs	Internet
Globalisation	X	X
Growth	X	X
Low Cost/ Efficiencies	X	X
Added Value	X	X
Communication, Knowledge Sharing	X	X
Problems	**ICTs**	**Internet**
Digital Divide	X	X
Spam	X	X (Information Overload/Anxiety)
Dehumanisation	X	X (Health and Safety)
Security/Trust Issues		X
Legal Issues		X

As Table 2 shows, the majority of benefits from ICTs and Internet technologies affect organisations. However, a number of the problems that occur with these technologies seem to affect individuals more than organisations.

Although this chapter has discussed technology thus far, the next section discusses how this technology is adopted and used within society. Discussed is technology adoption, and Rogers' (2003) Information Diffusion theory.

2.5 Technology Adoption and Innovation Diffusion

A number of theories address the adoption of innovations including, Social Learning Theory (Bandura, 1977), Concerns-Based Adoption Model (Hall & Hord, 1987), Technology Acceptance Model (Davis, Bagozzi, & Warshaw, 1989) and Rogers' Diffusion of Innovations theory (2003). These will be discussed further in this section.

In Social Learning theory, Bandura (1977) classes the influences on human social behaviour as personal, environmental, and behavioural (Dembo, 1994; Schunk, 2000). Krohn adds that

"the process consists primarily of instrumental learning that occurs either directly through rewards and punishments for behaviour, or vicariously by imitation or the observation of the behaviour and the consequences that the behaviour has for others" (Krohn, 1999, p. 464).

Both the Rogers' (2003) Diffusion of Innovation Theory and the Concerns-Based Adoption Model (Hall & Hord, 1987) are used to study adoption of innovations (Sherry & Gibson, 2002). The Concerns-Based Adoption Model depicts eight different stages of innovation: non-use, orientation, preparation, mechanical use, routine, refinement, integration, and renewal (Sahin & Thompson, 2006). While the Concerns-Based Adoption Model focuses more on the adoption of an innovation, Social Learning theory looks at the diffusion of an innovation. However, Rogers' Diffusion of Innovation theory brings together both of these theories, examining both the *adoption* and the *diffusion* of an innovation being considered (Sahin & Thompson, 2006). It is for this reason that Rogers' theory will be used in this thesis.

The Technology Acceptance Model (TAM) was developed by Davis in 1986 as part of a Doctoral Thesis. However, it was revised in 1989 (Davis, Bagozzi, & Warshaw, 1989). The TAM theory explains the causal links between the belief (usefulness of an ICT system and the ease of use), and the users' actual attitudes and intentions. It addresses the pre- and post- implementation beliefs and attitudes of the user (Szajna, 1996).

The classical theory of Diffusion of Innovations was introduced by Rogers (2003) in the 1960s. However, it has been revised five times since. The theory has been used to describe change in many sectors, ranging from anthropology, education, sociology, general economics and many more. The Innovation Diffusion model (Rogers, 2003) provides a general explanation of how new ideas are disseminated through social systems over time (Kappelman, 1995; Suraya, 2005). Kappelman suggests that,

"The theory has a communication-oriented view of innovation based change with a focus at the individual level of the process. ICT studies utilising the theory have therefore considered individual characteristics and perceptions, as well as other theory elements such as social norms, communication channels, opinion leaders, technology champions, the time factor, and the characteristics of the technology being implemented." (Kappelman, 1995, p. 66).

Roger's theory appears to be quite appropriate to the implementation of ICTs in organisations, although imperfectly (Attewell, 1992; Brancheau & Wetherbe, 1990). As Rogers (2003) explains,

"Getting a new idea adopted, even when it has obvious advantages, is difficult. Many innovations require a lengthy period of many years from the time when they become available to the time when they are widely adopted. Therefore a common problem for many individuals and organisations is how to speed up the rate of diffusion of an innovation." (Rogers, 2003, p. 1)

The next section will explain the Innovation Diffusion process and the Innovation-Decision process (Rogers, 2003).

2.5.1 Diffusion of Innovations Theory

At the very heart of the Innovation-Diffusion Process (Rogers, 2003) is the concept of diffusion. Rogers (2003) explains diffusion as,

"The process in which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of communication, in that the messages are concerned with new ideas." (Rogers, 2003, p. 5)

According to Rogers (2003), the adoption rate of an innovation is determined by four elements. These four elements are identifiable in every diffusion research study or diffusion campaign that has been identified throughout the world and comprise a widely used framework in the area of technology diffusion and adoption (Sahin & Thompson, 2006). As most of the research into Rogers Diffusion of Innovation theory is technology based, the word "technology" and "innovation" are interchangeable. The four elements include;

- The Innovation,
- Communication channels as an information-exchange relationship about the innovation,
- Time dimension since the innovation is introduced, and
- Social system in which the innovation is diffused.

The Innovation

According to Rogers (2003), an Innovation is,

"An idea, practice, or object that is perceived as new by an individual or other unit of adoption. It matters little, so far as human behaviour is concerned, whether or not an idea is 'objectively' new as measured by the lapse of time since its first use or discovery. This perceived newness of the idea for the individual determines his or her reaction to it. If an idea seems new to an individual, it is an innovation." (Rogers, 2003, p. 12).

The perceived attributes of an innovation can explain the rate of adoption of an innovation. Research into the innovation characteristics describes the relationship between the characteristics, or the attributes, of an innovation and the adoption and implementation of that innovation (Rogers, 2003; Tornatzky & Klein, 1982).

Communication Channels

Communication Channels are defined as,

"The process by which participants create and share information with one another in order to reach a mutual understanding. Diffusion is a particular type of communication in which the message content that is exchange is concerned with a new idea. The essence of the diffusion process is the information exchange through which one individual communicates a new idea to one or several others" (Rogers, 2003, p. 18)

The diffusion of an innovation is a social process that requires communication of ideas from individuals who know about them to individuals who do not.

Time

Time is an important element of diffusion. Other behavioural science research is timeless, in the sense that the time dimension is ignored (Rogers, 2003). However, time is often measured by the respondents' recall and can be more subjective and hard to measure (therefore can be criticised). Nevertheless, time is involved in diffusion,

"1 – when the innovation-decision process by which an individual passes from first knowledge of an innovation through its adoption or rejection,

2 – The innovativeness of an individual or other unit of adoption (that is, the relative earliness/lateness with which an innovation is adopted) compared with the other members of the system,

3 – An innovation's rate of adoption in a system, usually measured as the number of members of the system who adopted the innovation in a give time period." (Rogers, 2003, p. 20)

Social System

Rogers' defines a Social System as

"A set of interrelated units that are engaged in joint problem solving to accomplish a common goal. The members or units of a social system may be individuals, informed groups, organisations, and/ or subsystems." (Rogers, 2003, pp. 22-23)

Within the element of Social System, Ferle and Edwards (2002) speculate that culture is a significant influential factor which leads to technology diffusion. Their studies examined cultural variables to find differences that lead to the efficacy of technology diffusion. Based on the theories from Rogers' Diffusion of Innovation (2003), and Hofstede's (1997) cultural dimensions theory, the authors were able to show that cultural factors do influence the adoption rate of the technology. Below are the four propositions presented as a guideline to understand the diffusion of the Internet in other countries around the globe,

- The more individualistic a society, the faster the rate of Internet diffusion,
- The higher the uncertainty avoidance that exists within the society, the slower the rate of Internet adoption,
- The larger the power distance (the ability to for individuals to challenge the social norms and hierarchy existing in a society, the slower the rate of Internet adoption, and
- The more masculine (Masculinity versus Femininity, can be defined as the extent of competitiveness and aggression in a culture relative to caring for others and quality of life concerns(de Mooij, 1998)) a society, the slower the rate of Internet diffusion (Ferle, Edwards, & Mizuno, Internet Diffusion in Japan: Cultural Considerations, 2002, pp. 70-71)

A change agent within a social system shapes the path an innovation takes in its journey to adoption. Rogers (2003) describes these changes agents as,

"Providing a communication link between a resource system with some kind of expertise and a client system. One main role of the change agent is to facilitate the flow of innovations from a change agency to an audience of clients. For this type of communication to be effective, the innovations must be selected to match clients' needs." (Rogers, 2003, p. 368)

The Innovation-Decision Process is the five step process that will be used in this thesis. This process explains the diffusion of an innovation from finding out about an innovation, to considering whether to continue its use. The next section of this chapter will explain and discuss the process.

2.5.2 The Innovation-Decision Process

The Innovation-Decision process includes the processes of information seeking and information use as an individual (and/or organisation) seeks to reduce uncertainty about implementing an innovation (Rogers, 2003). In the process, an individual (or organisation) passes through a number of sequential stages, from gaining initial knowledge, to forming an opinion towards the new idea, to making a

decision to adopt it, to implementing the innovation, and then lastly confirming the decision (Rogers, 2003). Each of the sequential stages is discussed further in the next section.

The Innovation-Decision process is a process by which an innovation can be tracked through its stages of adoption. Figure 1 shows the stage of the Innovation-Decision process, from Knowledge of an innovation, to its Confirmation.

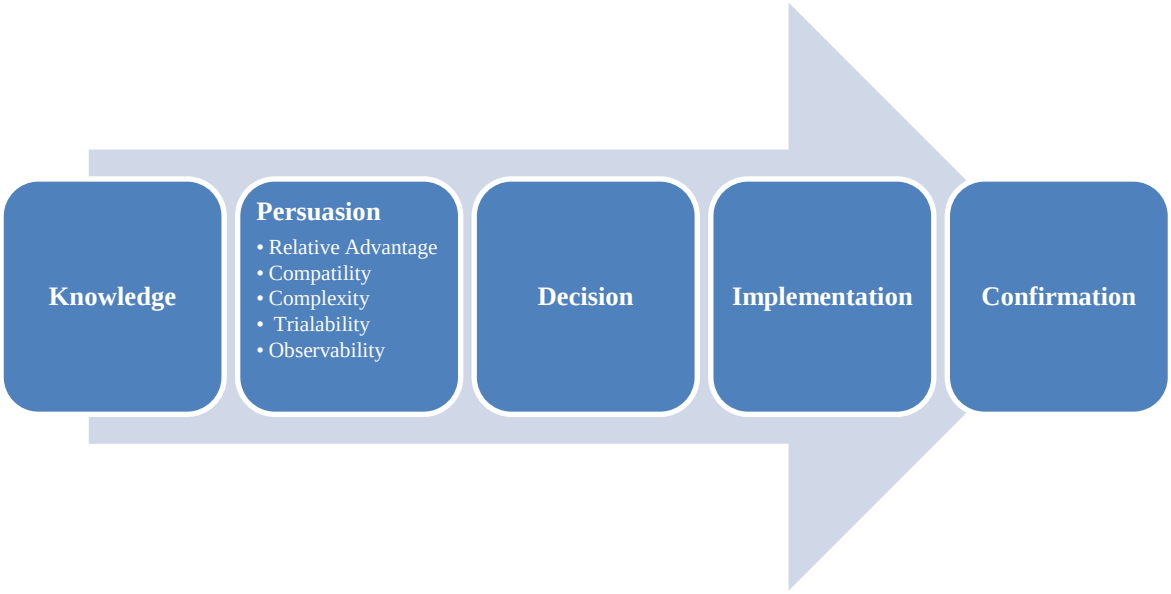


Figure 1 - The Innovation-Decision Process (Rogers, 2003, p. 170)

Rogers (2003) has described the Innovation-Decision process as a five stage process in which an individual moves through to adopt an innovation. However, are the five stages as clear cut in reality, as they are in the process? Rogers (2003) suggests probably not, he adds to this by saying,

"A definitive answer is impossible to provide, as it is difficult for a researcher to probe the intrapersonal mental processes of individual respondents. Stages may be useful as a means of simplifying a complex reality, so as to provide a basis for understanding human behaviour change and for introducing an innovation." (Rogers, 2003, p. 195)

Individuals may or may not recognise when a stage starts, and when one ends. However Rogers (2003) suggests that maybe think of the stages as a mental framework, and not expect sharp division between each stage.

Knowledge

In this stage, Rogers (2003) describes the Knowledge stage occurring, *"…*when an individual (or other decision-making unit) is exposed to an innovation's existence and gains an understanding of how it functions*"* (Rogers, 2003, p. 171)

The first stage of the Innovation-Decision process is the Knowledge stage. Rogers (2003) explains that some observers view the individual as a relatively passive player in this process. This stage is very much a knowledge seeking activity, and the individual will want to know, 'What the innovation is? 'How does it work?', and 'Why does it work?'. The first of these three questions will be answered by *awareness knowledge*. Rogers (2003) explains this term as information that an innovation exists. This awareness knowledge may come by being accidently exposed to it, for example a sales representative explaining a new medical technique to a doctor (where the doctor did not actively seek

the knowledge). The other kind of awareness knowledge is when an individual will gain knowledge through behaviour they initiate. The predispositions of individuals influence their behaviour towards communication channels. Individuals might be more exposed to messages that effect their interests, needs and existing attitudes.

Once an individual finds out about an innovation, awareness knowledge may prompt them to seek more information and answer the other questions of, 'how does it work?', and 'why does it work?'. To answer the 'How does it work?' question, the individual will use *How-to knowledge*. Rogers (2003) explains that 'how-to' knowledge,

"…consists of information necessary to use an innovation properly. The adopter must understand what quantity of an innovation to secure, how to use it correctly, and so on. In the case of innovations that are relatively complex, the amount of how-to knowledge needed for adoption is much greater than in the case of less complex ideas." (Rogers, 2003, p. 173)

Once individuals understand how the innovation works, they may want to know the answer to the third question, 'why does the innovation work?'. To answer this, the individual must seek out *principles knowledge*. Rogers (2003) explains the concepts as,

"Information dealing with the functioning principles underlying how an innovation works. Examples of principle knowledge include the notion of germ theory, which underlies the functioning of boiling water, vaccinations, and latrines in village sanitation and health campaigns. It is usually possible to adopt an innovation without principle knowledge, but the danger of misusing a new idea is greater and discontinuance may result". (Rogers, 2003, p. 173)

The individual must have sufficient knowledge in order to become informed. After this occurs, the persuasion stage follows.

Persuasion

The next stage in the Innovation-Decision process to the Persuasion stage, persuasion occurs when,*"…*an individual (or other decision-making unit) forms a favourable or an unfavourable attitude towards the innovation*"* (Rogers, 2003, p. 169)

Davis (1993) argues that a lack of user acceptance has often been an impediment to the success of information systems. In a review of 75 articles relating to innovation characteristics and their relationship to innovation adoption and implementation, Tornatzky and Klein (1982) concluded that three innovation characteristics (relative advantage, compatibility, and complexity) had the most consistent, and significant relationships to the innovation process. It was found that relative advantage and compatibility were both positively related and complexity was negatively related to the innovation adoption process (Al-Gahtani, 2003). Rogers' Diffusion of Innovation (2003) has identified five characteristics that Rogers has argued accounts for 87% of the variance in rate of adoption (Al-Gahtani, 2003). These are relative advantage, compatibility, complexity, trialability and observability, which are discussed below.

Relative Advantage

The term "Relative Advantage" refers to the degree to which an innovation is perceived to be better that the innovation it has replaced. Usually the degree in which relative advantage is measured is often expressed as economic profitability, social prestige, convenience, satisfaction, or other benefits (Al-Gahtani, 2003; Rogers, 2003). Rogers suggests that it does not matter whether the innovation is "objectively" beneficial; all that matters is that the individual perceives that innovation is

advantageous. The greater the perceived relative advantage, the faster the innovation will be adopted. Researchers have found that relative advantage as one of the best predictors of an innovation adoption rate (Rogers, 2003).

Compatibility

Compatibility refers to the degree in which an innovation is perceived to be consistent with current socio-cultural values and beliefs. An idea that is incompatible with the values and norms of a social environment is less likely, if at all, to be adopted as quickly as a more compatible innovation. The adoption of an innovation that is not compatible often needs the prior adoption of a new value system prior to the new innovation, this is generally a very slow process (Rogers, 2003). Rogers adds that compatibility of an innovation, as perceived by the members of a social system, is positively related to the rate of adoption (Al-Gahtani, 2003).

Complexity

Complexity is the degree of which an innovation is perceived to be difficult to implement, understand, or use (Rogers, 2003). An innovation may be classified on a simplicity-complexity continuum (Al-Gahtani, 2003). Some innovations are more readily understood by most members of a social system. Others are not and are often adopted more slowly. Rogers suggests that the level of complexity and adoption is, as perceived by the members of a social system, negatively related (Al-Gahtani, 2003).

Trialability

Trialability is the degree to which an innovation may be experimented with on a limited basis by an individual (Rogers, 2003). When individuals trial an innovation, this gives the innovation meaning, and they find out how it works on a personal level, and under one's own conditions. A trial is used to dispel uncertainty about an innovation (Al-Gahtani, 2003). Rogers advises that trialability of an innovation, as perceived by the members of a social system, is positively related to the rate of adoption (Al-Gahtani, 2003).

Observability

Observability is the degree to which the results of an innovation are perceptible to others (Rogers, 2003). The results of some ideas are very easy to observe and communicate to others and are more likely to be adopted, however others are difficult to explain and communicate to others and less likely to be adopted. Rogers (2003) explains that observability of an innovation stimulates peer discussion and usually the adopter of an innovation often wants evaluation information about it. Observability of an innovation, as perceived by the members of a social system, is positively related to the rate of adoption (Al-Gahtani, 2003).

Re-Invention

This is not one of the perceived attributes of an innovation, however it should be considered as one of them. Re-Invention is defined as the degree in which as innovation is changed, or customised by the user, during in the process of either adoption or implementation (Rogers, 2003). Some researchers measure re-invention as the degree to which an individual's use of an innovation has shifted from the core or "mainline" version of an innovation as promoted by the change agent (Everland, 1977). As researchers became aware of this process and started to measure it, they began to find that a considerable degree of re-invention had taken place for many innovations (Rogers, 2003). Re-invention of an innovation, as perceived by the members of a social system, is positively related to the rate of adoption and the adoption is more likely to be sustained (Rogers, 2003).

Decision

The next stage of the process is the Decision stage. Rogers (2003) described this stage as taking place when,

"An individual (or other decision-making unit) engages in activities that leads to a choice to adopt or reject the innovation" (Rogers, 2003, p. 169)

The decision to adopt can only have two outcomes, the decision to adopt, or reject. If the individual (or organisation) decides to adopt the innovation, the next stage is the Implementation stage. However if they decide to reject the innovation, they might choose to reject it completely, or adopt it at a later point in time.

Implementation

Once the decision has been made to adopt an innovation, the next stage is the Implementation stage. This stage occurs when *"...*an individual (or other decision-making unit) put a new idea into use*"* (Rogers, 2003, p. 169)

Rogers (2003) explains that until this stage, the Innovation-Decision process has been a mental process of thinking and deciding. However, this stage sees a distinct behaviour change as the new idea is actually put into practice. The Implementation stage generally follows the Decision stage rather directly, unless it is held up by some operation problem, like a shortage of the innovation. This stage can often create the most amount of uncertainly about the expected characteristics about the innovations. These can include unforeseen implementation issues, like unknown compatibility problems between hardware and software. Individuals will want to know answers to such questions, like 'How does it work?', 'How do I use it?', and 'What problems may occur, and how will they be fixed?'. Problems with innovations are usually more severe when the adopter is an organisation, however this will be discussed later in the chapter (Rogers, 2003).

Confirmation

The Confirmation stage is the last stage of the Innovation-Decision process. Rogers (2003) describes this stage as when,

"…an individual (or other decision-making unit) seeks enforcement of an innovation already made, but he or she may reserve this previous decision if exposed to conflicting messages about the innovation" (Rogers, 2003, p. 169)

This stage of the Innovation-Decision process provides the individual a choice to continue the innovation's use or discontinue it.

2.5.3 Innovation in Organisations

Many innovations are adopted by organisations, and in countless cases, an individual cannot adopt an innovation until an organisation does. Outlined in this section are some of the marked differences between individual adoption, and organisational adoption.

Organisational Decisions

When an organisation makes a decision to either adopt, or not adopt, an innovation, the type of decision made will be one of three different categories. Rogers (2003) categorises these types of innovation-decisions into three types: Optional, Collective, and Authority.

The optional innovation-decision is the decision to adopt or reject an innovation made by the individual which is independent of the decision by other members of the system. An example of this

from the study has been when a member makes an individual decision to use email to communicate with other club committee members.

A collective innovation-decision is the decision to adopt or reject an innovation made by consensus among the members of the system. An example of this in this study was when a Club decided to have a vote at a members meeting on whether to adopt a club website.

An authority innovation-decision is the decision to adopt or reject an innovation made by relatively few members in a system that have power, high social standing, or expertise. An example in this study was when a Committee have made a decision, such as to adopt a Club Website (Rogers, 2003).

The Role of Champions

The role of an innovation champion in the Innovation-Decision process is to help ease the differences, or opposition to an innovation. Rogers (2003) describes a champions as,

"A charismatic individual who throws his or her weight behind an innovation, this overcoming indifference or resistance that the new idea may provoke in an organisation. An innovation champion can play an important role in boosting a new idea in an organisation. Of course, anti-innovation champions (that is, opponents) can prevent a new technology from reaching the routinisation stage of the innovation." (Rogers, 2003, p. 414)

Rogers (2003) adds to this that the presence of an innovation champion is often very important to the innovation process in organisations.

Schön (1963) suggested that a new idea either finds a *champion* or dies. The role of an innovation champion is an important one. One idea of an innovation champion may be a powerful individual, holding a influential position, like a company president (Smith, Redican, & Olsen, 1992). Day (1994) suggests that this idea of a powerful individual was true for projects that were costly, highly visible, or radical. There must be a powerful innovation champion if the innovation has a high level of uncertainly. However, champions of less radical innovations can often be middle managers (Day, 1994). A study conducted by Goodman and Steckler (1989) found the most effective champions were not senior staff inaccessible to their subordinators. The authors identified three basic qualities for innovation champions. These include;

- The innovation champion occupied key linking positions in their organisation such as mangers,
- They possessed analytical and intuitive skills in understanding various individuals' aspirations, and
- They demonstrated well-honed interpersonal and negotiating skills in working with other people within their organisation (Goodman & Steckler, 1989, p. 65).

Therefore innovation champions were brokers and arrangers for the innovation within an organisation. They helped fit the innovation into the organisational context. The next section will discuss indigenous knowledge systems with the innovation decision process.

Indigenous Knowledge Systems

The concept of indigenous knowledge is when the basic notion of the compatibility attribute of a new innovation has a relationship to the existing practice. Rogers' (2003) states that when change agents and others try to introduce an innovation, they often make the mistake of performing the "empty vessels fallacy", in thinking the potential adopter lacks the experience in which to associate the new

idea to past practice. An example of this was when Dr. Juan Flavier (a health expert in rural Philippines) found that villagers in the region understood when a chicken ate certain seeds they stopped laying eggs. The indigenous knowledge of this was used to explain to villages how the oral contraceptive pill worked. Thus, he built on the compatibility of the new innovation with existing knowledge. The next section will discuss the consequences of innovation adoption.

Consequences of Innovations

When an innovation is adopted, there are always consequences. These consequences can be good or bad, however they must be considered. Rogers (2003) defines these consequences as,

"Changes that occur (within) an individual or a social system as a result of the adoption or rejection of an innovation .Invention and diffusion are means to an ultimate end: the consequences that result from the adoption of an innovation". (Rogers, 2003, p. 436)

Rogers (2003) has stated that the research about consequences have mainly been case studies. These studies have produced a number of categories for consequences, however it is difficult to predict when and how these consequences will occur, especially in the long term. The unpredictability of these consequences creates uncertainly in the Innovation-Decision process.

2.6 Summary

When data is processed, it creates information (Turban, Leidner, McLean, & Wetherbe, 2006), and attributes of information that consist of time, content and form (Bocij, Chaffey, Greasley, & Hickie, 2006) Access to information is the basic requirement for business creation, growth, and survival. Information Communication Technologies (ICTs) are capable of easing information problems within the business sector (Diaz, 1997). Information is fundamental the success in any business.

Information and business go hand in hand, and this is fundamental to the success to any business (Gelinas, Sutton, & Fedorowicz, 2004). From the use of information comes the need for business to make extensive use of ICTs. This has have resulted in the dramatically high growth rates in the United States and Europe throughout the 1990s (Bassanini & Scarpetta, 2002; Daveri R. , 2002).

The majority of benefits from ICTs and Internet technologies generally affect organisations. However, a number of the problems that occur with these technologies seem to affect individuals more than organisations.

To have these technologies implemented, there must be a process. This thesis will use Rogers (2003) Innovation Diffusion theory to examine the adoption process of Internet applications by local sporting clubs. Innovation diffusion is the process that has an innovation communicated through certain social channels over a period of time to members of a social system. This process is about having a new idea adopted. (Rogers, 2003). The process of adopting an innovation is called the Innovation-Decision process. This process sees decision makers pass through stages that include gaining knowledge about an innovation, forming an opinion about it and making a decision to adopt or reject the innovation. This is then followed by implementing it, then considering whether to continue the innovation's use on an ongoing basis.

Having an innovation adopted within an organisation creates some different challenges than at an individual level. This includes the type of decision process (optional, collective, or authority innovation-decision). The role of innovation champions plays a major part with the adoption of an innovation. Schön (1963) commented that a new idea either finds a champion or dies. The next chapter will examine Community Based Organisations (CBOs).

3 Chapter Three – Community Based Organisations

3.1 Introduction

Local sporting bodies are the focus of this thesis and are part of a group known as community based organisations (CBOs). This chapter will define community, the types of community, and in turn, community based organisations. It will also discuss local sporting bodies (for example Associations and Clubs), and examine how CBOs use the Internet.

3.2 Community

The word 'community' is derived from the Latin term 'Communis', which means fellowship or common relations and feelings. However, the term 'Community' evokes a concept that is not easily defined. Warren (1978) suggests that the idea of community is simple, *"*...so long as one does not ask for a rigid definition*"* (Warren, 1978, p. 1).

Warren actually identified some ninety-four definitions of 'Community'. Sixty-nine definitions included the terms: 'social interaction', 'common ties', and 'location' as descriptive of the concept. The emphasis on human interaction and relationships within places, commonalities in interests and values were also more regularly stated. Warren ultimately defined the concept of 'Community' as the *"*...combination of social units and systems which perform the major social functions having locality relevance*"* (Warren, 1978, p. 9)

However, after establishing the term 'community', what is a 'good' community? The term 'good community' was described by Galbraith (1995) as,

"A community is concerned with the primary group relationships, autonomy, viability, power distribution, participation, commitment, heterogeneity, neighbourhood control, and the extent of conflict exhibited. A good community is people-oriented, controlled, and democratic in nature. It is concerned with the capacity of local people to confront their problems through concerted actions, directing themselves to the distribution of power, arranging for participation and commitment in community affairs, understanding how differences among people can be tolerated, and debating the extend of neighbourhood control and conflict." (Galbraith, 1995, p. 2)

In the above descriptions, 'Community' is considered geographical and locational in nature; however others suggest that communities can focus on commonalities of interest, concerns and functions of people (Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985; Brookfield, 1983; Hamilton & Cunningham, 1989; Hiemstra, 1993; Roberts, 1979). There are also "communities of interest" and "communities of function" which may undermine the concept of a locational expression of community (Galbraith, 1995). Communities of interest are commonly tied together by a single interest, such as leisure activities, civic and political interests, and spiritual and religious beliefs, whereas communities of functions are identified by their roles in sociality, like Professors, Doctors, or Judges (Galbraith, 1995).

Another way of categorising communities is with demographic and psychographic traits. Demographic Communities are bound together by common demographic qualities such as race, gender, sex, and age. Examples of these are the "Australian Greek community", or the "elderly community". Psychographic communities are bound together by common value systems, social class and life style, such as the "farming community" (Galbraith, 1995).

With the advent of the Internet, a new type of community has appeared; the virtual community. Virtual communities are groups of people who communicate via electronic media (Romm, Pilskin, & Clarke, 1997) .

Thus, whist the concept of "Community" is quite easy to define, there are many different definitions. Pickens (1932) described community and living together as an art, and therefore its description was not an exact science. This is why narrowing down an all encompassing definition is difficult. Galbraith (1990) has suggested this definition that covers most of the areas,

"The combination and interrelationships of geographic, locational, and non-locational units, systems, and characteristics (which) provide relevance and growth to individuals, groups, and organisations" (Galbraith, 1990, p. 5)

When someone is part of a community, be it geographic, psychological, or demographical, they all share the same benefits of having a sense of community (Galbraith, 1990).

3.2.1 Sense of Community

McMillan and Chavis (1986) define *sense of community* as,

"A feeling the members have of belonging, a feeling that members matter to one another and the group and a shared faith that members' needs will be met through their commitment together."(McMillan & Chavis, 1986, p. 9)

This notion is based on the four elements of 'membership', 'influence', 'integration and fulfilment of needs' and a 'shared emotional connection'. From this, many studies demonstrate that sense of community is related to active participation in community life (Botta, 1994; Chavis & Wanderman, 1990; Davidson & Cotter, 1989; Davidson & Cotter, 1997) and subjective well-being (Davidson & Cotter, 1991; Pretty, Andrewes, & Collett, 1994; Pretty, Conroy, Dugay, Fowler, & Williams, 1996; Prezza & Costantini, 1998). The *sense of community theory* relates to residents' identification with a neighbourhood and the ways they connect to their community influence, their involvement in local organisations and to lessen the feelings of isolation (Wandersman & Florin, 2000). Numerous studies have found one can increase the sense of community through participating in the following activities,

- Involvement in religious and neighbourhood organisations, and/or living in neighbourhoods with higher rates of community-level neighbourhood involvement and voter registration (Brodsky, O'Campo, & Aronson, 1999)
- Participation in a housing association (Chavis, Florin, & Rich, 1987; Chavis & Wanderman, 1990)
- Participation in community organisations and having children (Obst, Smith, & Zinkiewicz, 2002), and
- Participation in groups and associations, such as sports associations, parishes, cultural organisations, trade unions and political and voluntary associations (Prezza, Amici, Roberti, & Tedeschi, 2001)

However, with this information, there is a link between sense of community and individual well-being. In Australian teenagers, a measure of sense of community assisted in predicting loneliness (Pretty, Andrewes, & Collett, 1994) as well as happiness, worry and coping abilities (Pretty, Conroy, Dugay, Fowler, & Williams, 1996). In a US study, Davidson and Cotter (1991) discovered a significant relationship between sense of community and subjective well-being. The study also concluded that in larger cities (about 300,000+ citizens), the relationship was still significant, however slightly weaker than smaller towns. However, in another study conducted in three different sized towns in Italy (Prezza & Costantini, 1998), the sense of community in a smaller town was found to be related to life satisfaction, self-esteem, and perceived social support. In an average-sized town it was

only related to life satisfaction, and in a large city there was no relationship found between those variables.

The discussion now moves onto Community Based Organisations.

3.3 Definition of Community Based Organisations

Community Based Organisations (CBO) have developed throughout the world, be these sporting clubs, neighbourhood watch programs (where neighbours form and group to watch over the safety of their houses), or even the local scout halls. Kellog (1999) defined CBOs as,

"Non-profit organisations that operate in urban neighbourhoods to benefit neighbourhood residents and address their concerns. CBOs typically serve a relatively small geographic area, tend to have a small full time staff and often depend on neighbourhood volunteers for programme delivery" (Kellogg, 1999, p. 447)

This definition addresses the organisations that focus on changes in social, economic and physical aspects of the community development, like crime mitigation, housing rehabilitation, maternal and infant health care, youth programmes, job training, tenant advocacy, recreational activities, small business assistance and neighbourhood planning (Keating, Krumholz, & Star, 1996)

CBOs take on many forms, such as, *"*...recreational associations, service clubs, local community associations, advocacy groups, and community develop groups*"* (Denison & Johanson, 2007, p. 3).

With the many forms these organisations take, they have become a major economic force (Anheier, 2000). A study conducted by the Johns Hopkins Comparative Non-profit Sector Project of 22 countries (which includes the US, the UK, France, Germany and Japan), found that the CBO sector employed on average five percent of total employment. In addition to paid employment, CBO organisations in those 22 countries had the equivalent of 10.4 million fulltime employees as volunteers. This comprised 7.1 percent of total employment in those 22 countries (Salamon, Anheier, List, Toepler, & Sokolowski, 1999).

CBOs have a significant economic impact in Australia. They contributed 4.1% to the national GDP (in 2006/07) (up from 3.3% in 1999/2000 (Australian Bureau of Statistics, 2002)). In addition to this, CBOs employed almost 889,000 people in 2006/07 (up from 600,000 in 1999/2000) (Australian Bureau of Statistics, 2002), and organised around 4.6 million volunteers in 2006/07 (Australian Bureau of Statistics, 2006).

In the United States, there has been a long history of CBOs supporting the community. Since the beginning of the later 19th Century, CBOs have consistently worked to improve living conditions in poorer urban areas (Sliver, 1985). The early organisations included settlement houses, school co-operatives, playground advocates and public health organisations (Davis A. , 1983).

3.4 Community Based Organisations and Small Business

There is relatively little research conducted in relation to the use of ICTs and the Internet by CBOs. However, CBOs and small business share many characteristics, research into the use of ICTs by small businesses can inform this study. The next section will discuss ICTs, the Internet, and its impact on small business and CBOs.

3.4.1 ICTs, the Internet, Small Business and CBOs

Depending on what part of the world they were based, there are many definitions of small business. The European Union, in which small and medium-sized enterprises account for more than 90% of all European enterprises, small business are defined thus,

"Community level, small and medium-sized enterprises (SMEs) are defined by a set of criteria concerning the workforce, turnover and independence of the business. In terms of the workforce alone, a micro-enterprise has fewer than 10 employees, a small enterprise fewer than 50 and a medium-sized enterprise fewer than 250. The European Union has specifically defined SMEs so that the benefits introduced for their support are reserved for those businesses which genuinely have the characteristics of such firms."(European Union, 2007)

In the United States, this definition is different. The Small Business Administration (a department of the United States Government) defines them as

"..one that is independently owned and operated and which is not dominant in its field of operation" (United States Government, 2007)

However, the definition will vary from industry to industry to reflect the difference in the industry. Therefore, a definition based on an employee figure is not stated, but the Small Business Administration use the number of less than 500 employees for their research purposes.

In Australia, the government define small and medium businesses as,

"Small business has less than 20 employees; a medium business has between 20 and 199 employees and SMEs have less than 200 employees" (Australian Government, 2007)

For the purposes of this thesis, a small business is,

"Any businesses with 1-20 employees, the majority of small businesses are micro-businesses, or businesses with one to five employees. When based at home, these businesses are known as home-based businesses.(Karanasios, Sellitto, Burgess, Johanson, Schauder, & Denison, 2006, p. 2)Small businesses share many resource limitations with CBOs (Karanasios, Sellitto, Burgess, Johanson, Schauder, & Denison, 2006). If a small business has limited ICT expertise, or resources, this can be a barrier for adoption. ICT expertise in the organisation is shown to be important for ICT adoption (Montazemi, 1988; Raymond, 1985). Diochon and Wright (2005) hypothesize that after efficiency and effectiveness have been accounted for (generally the first stage of adoption models), having internal ICT expertise will lead to increased ICT adoption.

Small businesses have been lacklustre with the adoption of ICT compared to big businesses (Burgess, Sellitto, & Karanasios, 2009; Craig & Murray, 2001). Is this a problem with planning (or merely short term planning), lack of expertise, lack of knowledge, or all of the above? Or are managers of small businesses still thinking about the problem of 'When is the right time for (new) ICT implementation?'

Although having to fulfil different needs, CBOs and small businesses face similar obstructions to the successful use of ICTs. One of the most significant barriers is the lack of ICT expertise and resources, due to their size (as small businesses generally consist of any business with between 1-20 employees) (Karanasios, Sellitto, Burgess, Johanson, Schauder, & Denison, 2006). Karanasios et al. (2006) describe the differences between the organisations,

"CBOs could probably be classed as small businesses in many instances, but their special characteristics make them a group to categorise separately. For instance, their revenue sources are often government grants or donations, as opposed to the sales revenue of small businesses and they often target their websites towards their members or donors, rather than customers. Whilst there are a number of differences between them, there is little doubt that CBOs are quite similar to small businesses when it comes to many aspects related to the use of information and communications technologies (ICTs)." (Karanasios, Sellitto, Burgess, Johanson, Schauder, & Denison, 2006, p. 2)

The adoption of the Internet and e-commerce is closely related to the perceptions of the organisation with regard to trading and believed impact on the organisation. The cost of implementation can be a serious barrier for smaller organisations, some of the costs include preliminary planning, procuring of hardware and/or software tools (installing, training and reorganisation), continuous maintenance, servicing costs, and telecommunication charges. However the cost of initial investment has dropped in recent years (Papazoglou & Ribbers, 2006). The ROI can be difficult to calculate, and with small organisations needing to see significant returns before they will take a major step into e-commerce (Papazoglou & Ribbers, 2006). One of the major problems is that organisations, particularly smaller ones, are worried about being 'locked in' to one set of standards and technologies of one of their major customers, while not being compatible with another (Papazoglou & Ribbers, 2006).

Most CBOs are small organisations (Charity Commission for England and Wales, 2002). It is not surprising that CBOs labour with many of the same ICT resource challenges faced by SMEs, with respect to the substantial risks, general lack of knowledge, inadequate hardware and software, the need to rely on outside sources, lack of financial resources, and technical support (MacKay, Parent, & Gemino, 2004). Although the volunteer sector is a growth sector, there is an alarming lag in the amount of research conducted in this sector compared to more commercial sectors in all fields including ICT (Hall & Banting, 2002), with very few studies investigating the role of ICT and volunteers (Boyle, Macleod, Slevin, Sobecka, & Burton, 1993; Madon, 1999; Morgon, 1995). This implies that research based on e-commerce adoption based on SMEs cannot be generalised to small volunteer organisations. Therefore, more research is needed to investigate implications of the significant difference between volunteer and profit based SMEs (MacKay, Parent, & Gemino, 2004). The use of ICT in volunteer organisations would not have a commercial benefit, but would be aimed at improving the organisation's ability to share ideas and information to meet social needs (MacKay, Parent, & Gemino, 2004).

CBOs are keenly aware of what opportunities the Internet has to offer and the impact that it is having in many developed countries (Pargmegiani & Sachdeva, 2000). E-commerce has the power to revolutionise almost every aspect of the work volunteer organisations do (Saxton & Game, 2001). Results from the same UK study have shown that volunteer organisations have much to gain from using e-commence (Saxton & Game, 2001). Examples of the opportunities include, developing partnerships with concurring organisations from other parts of the counties and from around the world. Also, they can reach, or support, more stakeholders who benefit from their work (MacKay, Parent, & Gemino, 2004). Overtime, they can also decrease their operating costs, and generate additional sources of revenue. Nevertheless, some volunteer organisations have taken advantage of e-commerce, however the majority have not (VolNet National Advisory Committee, 1999). Daniel et al. (2002) have found that the volunteer sector is amongst the lowest levels of e-commerce adoption in the UK. Many of these volunteer organisations do not see the need to integrate these technologies in their ongoing business due to risk, cost, time, and lack of understanding of the full potential of e-

commerce and it strategic benefits. Therefore, the impact of e-commerce is much lower in the volunteer sector (Saxton & Game, 2001).

Table 3 demonstrates the differences and the similarities between small businesses and CBOs. This table outlines the resource poverties that CBOs and small business share, which include lack of resources, limited employee skills, lack of external help, short range management outlooks, and lack of understanding or appreciation of ICTs.

Category	Small Business Barriers (Burgess, 2002)	CBO Barriers (Denison, 2006)
Resources	- The cost of ICTs - Lack of time to devote to the implementation and maintenance of ICTs	- Lack of Resources
Employee Skills	- A lack of ICT knowledge combined with difficulty in finding useful, impartial advice	- Limited internal technology skills and knowledge - Insufficient project management skills - Limited availability of technical staff
External Skills	- Lack of use of external consultants and vendors	- Lack of Support and Training
Management	- Short-range, conservative management perspectives - A lack of formal planning or control procedures	- Negative attitudes to ICTs - Limited access to unbiased professional knowledge to assist with strategic and technical planning - Lack of understanding of technology needs
Benefits of ICTs	- A lack of understanding of the benefits that ICTs can provide, and how to measure those benefits	- Limited appreciation of ICT benefits

Table 3 - A Comparison of Barriers to the Successful Use of ICTs in Small Businesses (Karanasios, Sellitto, Burgess, Johanson, Schauder, & Denison, 2006, p. 2)

One group in the CBO family are local sporting clubs and associations. They provide the structure for people to engage in local sport throughout the world. The next section will discuss their roles and how they interact with ICTs and the Internet.

3.5 Local Sporting Clubs and Associations

In many countries around the world, the introduction of sporting programs, activities and events to the community is largely reliant on volunteers to invest their time and energy (Cuskelly, 1995). However the volunteer also receives enjoyment, recognition, and satisfaction from being of service to others in their community (Cuskelly, 1995). There is an important relationship between volunteers and sporting clubs. The Leisure Industries Research Centre (LIRC) report into volunteers in sport in the United Kingdom suggested volunteers fulfil diverse roles with sports clubs and their respective associations. These roles involve, but are not limited to, coaching, training staff, officials, administrators, managers and people who generally help out (Leisure Industries Research Centre, 1996). This is the same globally. Without these volunteers, many of the organisations would be deficient, or even discontinued (Coleman, 2002).

3.5.1 Management of Local Sporting Clubs

Volunteer boards and executive committees generally administer non-profit amateur sporting clubs and organisations. They contain elected, appointed, invited or self-selected members who are

responsible for the operations of the organisation (Doherty, Patterson, & Van Bussel, 2004). At a local, or community level, non-profit amateur sports clubs rely more or less exclusively on volunteer administrators (Doherty & Carron, 2003). Members of these committees are, as Shibli, Taylor, Nichols, Gratton, & Kokolakakis (1999) call them, '*Systematic Volunteers*' who, "...have a clearly defined role and are required to make a regular commitment to the operation of the club."(Shibli, Taylor, Nichols, Gratton, & Kokolakakis, 1999, p. 10)

As has been stated earlier, volunteers are principally distinguished from employees due to the fact they generally do not expect, or receive any remuneration for their time and effort. Also, volunteering may be thought of as a leisure or extracurricular activity (Green & Chaplip, 1998). The body of knowledge in the area of committee and volunteer boards has increased the understanding (Cuskelly, 1995; Cuskelly, McIntyre, & Boag, 1998; Doherty & Carron, 2003; Inglis, 1994; Inglis, 1997; Papadimitriou, 1999) of their composition and function, individual and group characteristics and behaviour, and individual and board/committee effectiveness (Doherty, Patterson, & Van Bussel, 2004).

According to the Australian Bureau of Statistics (2006), in 2004 there were 1.5 million persons (which was 9.6% of all persons aged 15 and over) involved in at least one non-playing role in organised sport and physical activity. Almost a third of these people were involved in two or more non-playing roles.

These figures can be broken down further, with 594,000 people involved as a coach, instructor or teacher; 574,000 people as a Committee member or administrator; and 335,400 as a referee or umpire (Australian Bureau of Statistics, 2006). At this time, Australia had a population of nearly 15 million people aged 15 and over. Volunteers are drawn to sporting committees in order to make a contribution, social relations, and or recognition (Doherty & Carron, 2003).

Measuring an organisation's performance is an important process an organisation must undertake. How would they know if they are successful or not? However, measuring the attainment of organisational goals is difficult, especially when what is measured keeps changing. The next section will discuss organisational goals and measurements.

3.5.2 Local Sport and the Internet

Sport is one of the most lucrative and most popular topics on the Internet (Church, 2000). This is hardly a surprise, as sport is the favourite pastime for the population in general, and sporting activities and competition produce a great deal of information, which can easily be diffused via the Internet (Chappelet, 2001). Local sport (and the people who play it) has generally used the Internet for gathering information (Förg, 2007). There is evidence to suggest that Internet technologies are being used in various ways to support the activities of local sporting organisations, however the affect on volunteers and their organisations are unclear (Bingley & Burgess, 2009).

3.6 Summary

There is a long history with people trying to make an all-encompassing definition of community. Different social scientists have defined communities in numerous ways in order to understand the concept. Anthropologists traditionally studied pre-industrial societies, which involved village sized communities where kinship was the basis for the organisation (Barab, 2003). Then in the 20th century, sociologists that studied urbanisation were particularly interested in the contrast between the strict village life and the alienation of the large cities (Barab, 2003). In the last few decades, sociologists have seen the development of new communities that are not location based, and professions whose

communities often constitute standards of good practice that are national, and merely not local (Barab, 2003; Becker, 1984; Wellman & Gulia, 1999).

The literature has shown that CBOs and Small Businesses face similar barriers to the successful use of ICTs. One of the most significant barriers is the lack of ICT expertise and resources (Karanasios, Sellitto, Burgess, Johanson, Schauder, & Denison, 2006). Due to these barriers, CBOs use of the Internet has not been a barrier to adoption.

Local sporting clubs and associations are part of the umbrella term of CBOs. The introduction of sporting programs, event and activities to the community is largely reliant on volunteers to devote their time and energy (Cuskelly, 1995). Volunteers are generally the administrator of these clubs and associations, and their involvement is priceless for any of these organisations. However the volunteer also receives enjoyment, recognition, and being of service to others in their community (Cuskelly, 1995).

The next chapter discusses the impact that volunteers have on society, and their motivations.

4 Chapter Four – Volunteerism

4.1 Introduction

Volunteering is the activity in which individuals donate time and effort for the benefit of others (Wilson, 2000). Volunteering contributes to the community in two ways, by the time and effort the volunteer donates to the community and by having community members engaged in these activities, the risk of them descending into antisocial behaviour is reduced (Eley & Kirk, 2002). This chapter will discuss volunteering and the effect it has on the community at large. Then it will discuss volunteers in sport, and volunteers and the Internet.

4.2 Definition of Volunteering

Definitions of 'Volunteer' and 'Volunteering' generally extend to the nature of the duties, the cultural and political context, and which level of society the activities are aimed at. Volunteering Australia is the peak body for volunteers throughout Australia. This peak body's definition of volunteering is as follows,

"Formal volunteering is an activity which takes place through not for profit organisations or projects and is undertaken:

- *To be of benefit to the community and the volunteer,*
- *Of the volunteer's own free will and without coercion,*
- *For no financial payment, and*
- *In designated volunteer positions only."* (Volunteering Australia, 2005)

This definition has been accepted and implemented by a number of other peak bodies within Australia, like Cricket Australia (2006) and Seniors.gov.au (2007) (an Australian Government website devoted to people over 50 year of age).

The United Nations Volunteers programme (UNV) was created in 1970 by the General Assembly of the United Nations (UN). According to the UNV, volunteering is defined as an action that meets the following three criteria:

- It is undertaken freely and without coercion
- It is undertaken for reasons other than financial gain, and
- It is undertaken to benefit the community as well as the volunteer (United Nations, 2001)

However, this three criteria definition was a shortened version of the UNV's long and detailed definition published for the International Year of the Volunteers (2001) for the United Kingdom. The UN has its own definition of volunteering,

"There are three key defining characteristics of volunteering. First the activity should not be undertaken primarily for financial reward, although the reimbursement of expenses and some token payment may be allowed.

Second, the activity should be undertaken voluntarily, according to an individual's own free-will, although there are grey areas here too, such as school community service schemes which encourage, and sometimes require, students to get involved in voluntary work and Food for Work programmes, where there is an explicit exchange between community involvement and food assistance.

Third, the activity should be of benefit to someone other than the volunteer, or to society at large, although it is recognised that volunteering brings significant benefit to the volunteer as well. Within this broad conceptual framework it is possible to identify at least four different types of volunteer

activity: mutual aid or self-help; philanthropy or service to others; participation or civic engagement; and advocacy or campaigning. Each of these types occurs in all parts of the world." (United Nations, 2007)

A number of peak bodies from around the world use this definition, such as Volunteering England (2007).

In 2001, the UN developed a Universal Declaration on Volunteering in consultation with volunteers from around world. This document was inspired by the Universal Declaration of Human Rights of 1948, and formalises the rights and responsibilities of volunteers, and the organisations that care for them. The UN consider,

"Their (volunteers) commitment as a tool for social, cultural, economic and environmental development in a changing world, and believe that each people has the right to freely assemble and associate for peaceful purposes." (United Nations, 2001)

This declaration has been adopted by volunteer organisations as a guiding principle since its inception, such as Volunteer Canada (2006). As the Universal Declaration on Volunteering suggests,

"Volunteering is a fundamental building block of civil society. It brings to life the noblest aspirations of humankind the pursuit of peace, freedom, opportunity, safety and justice for all people" (United Nations, 2001)

Summarising, volunteers give their time for free, without coercion, and for the benefit of the community.

The next section will discuss the impact that volunteers have.

4.3 Impact of Volunteers

In the United Kingdom, the volunteering sector is made up of 185,000 charities with a total annual income exceeding £26 billion (Charity Commission for England and Wales, 2002). Registered charities produce over 563,000 paid jobs representing 2.2% of the UK labour force, which is more than the telecommunication and postal industries (National Council for Voluntary Organisations, 2002). It is estimated that the overall activity of volunteers contribute the equivalent of £15 billion to the sector (MacKay, Parent, & Gemino, 2004).

Results from a national survey in 2006 issued by the Australian Bureau of Statistics (2006) indicated that,

- In 2006, 5.2 million (34%) Australians over the age of 18 years were active volunteers,
- Approximately 713 million hours were volunteered by adult Australians (an average of 137 per volunteer),
- Over a third (36%) of volunteer involvements was for less than 20 hours per year. Around 12% were between 140 and 299 hours a year, and a 7% were for 300 or more hours per year. The report suggests that senior members of the community tended to spend more time volunteering than their younger counterparts.
- The rate of volunteerism is increasing, in 1995 from only 24% of Australian adults to 34% in 2006 (Australian Bureau of Statistics, 2006). This number was at a high of 41% (Australian Government, 2005) in 2005, and

- The most common areas for volunteering, were sport and physical recreation (26% of total hours, which was around 185.3 million hours), community/welfare (19%), religious (17%) and education and training (10%) organisations (Australian Bureau of Statistics, 2006).

In the United States during 2000, 83.9 million people spent an average of 3.6 hours a week volunteering (Independent Sector, 2004), or over 15.7 billion hours. However, these statistics were not broken down into sectors. Nevertheless a study conducted in 1989 (Tedrick & Henderson, 1989) reported that 21% of people who volunteered in 1985, did so in the sports and recreation areas. This figure is similar to the United Kingdom's quantity of 26% in 1997 (Institution for Volunteering Research, 1998).

In Canada, the volunteer sector is made up of 58,000 employees, who generate more than $22 billion a year in wages and salaries. This figure represents approximately 8.3% of all paid jobs in the country and 6.3% of the national payroll (McMullen & Schellenberg, 2002). The Canadian volunteer sector is comparable to that of the nation's construction, mining and oil and gas industries (MacKay, Parent, & Gemino, 2004).

The impact and significance that volunteers, and in turn their organisations, contribute within the community is large. Without the efforts of these volunteers, many sectors of the community would be untenable.

The next section of this chapter will discuss the motivational theories behind the question, 'why do people volunteer?'

4.4 Motivations for Volunteering

Many volunteer organisations face large demands from their patrons, which is then complicated by a limited supply of volunteers (Edwards & Watts, 1983). People volunteer for a number of reasons (Clary & Snyder, 1999). The motivation to volunteer can also differ greatly from one person to another. In addition, younger groups indicate motives for volunteering as more self-serving and old groups more altruistic (Eley & Kirk, 2002). The motivation for volunteerism is seen to be a multi-dimensional spectacle where further study is required (Fitch, 1987; Hadsell & Cwik, 1987; King A. , 1984; Martin M. , 1994; Parnell, 1990; Smith D. , Altrusim, Volunteers, and Volunteerism, 1981). The area of volunteer research is highly complex and related theories are varied and often contradictory. Several theories, Expectancy Theory, Social Exchange Theory, and Function Frameworks are considered below.

4.4.1 Expectancy Motivation Theory

Expectancy Motivation Theory, conceptualised by Vroom (1964), is one of the most prominent motivational theories, with evidence supporting the view that expectancy theory can predict effort and performance (Van Eerde & Thierry, 1996; Mitchell, 1974). This theory was developed to predict the levels of motivation by individuals. Expectancy theory predicts that individuals will be more willing and motivated to place more effort if they believe their effort will result in a good performance (expectancy); this performance will lead to secondary outcomes, like recognition, rewards, and/or satisfaction (Erez & Isen, 2002). Expectancy Theory hypothesises that, *"*...behaviour is caused by a belief that it will result in a desired reward or goal*"*. (Winniford, Carpenter, & Grider, 1997, p. 136)

This theory suggests that everyone is motivated to volunteer by the three factors listed in Table 4; however the strength of each one depends on the person, and the situation.

Factor	Definition
Need for Achievement	The capacity for taking pride in accomplishment
Need for Affiliation	The concern for one's relationships with others
Need for Power	The desire to have an influence, or impact, on others

Table 4 - The Expectancy Motivation Theory (Winniford, Carpenter, & Grider, 1997)

The quantity of the motivation and the intensity is influenced by the concentration of needs and the degree of satisfaction anticipated. Motivation is conceptualised as,

"The combination of two major elements: one's expectancy that an action will have a particular outcome, and the instrumentality of that outcome in relation to other valued outcomes."(Silver, 1983, p. 8)

Mouter (1985) conducted a study using McClelland and Atkinson's (1953) version of expectancy theory to assess the motivation of volunteers. In this study, volunteers scored highest on affiliation, then achievement, and followed by power.

In another study using Expectancy Theory, Miller (1985) used volunteers in three social service agencies to rate the desirability of potential outcomes based on their behaviour. The researcher concluded that the subjects, whose regular employment failed to satisfy their psychological growth, were more likely to volunteer, or be involved in volunteering. The subjects expect volunteering to fulfil those needs and were satisfied with volunteering to the extent that they felt in control of their own lives.

4.4.2 Social Exchange Theory

Social Exchange Theory (SET) has its origins in the economic field when Homans (1961) and Blau (1964) formalised the work of a rational model of decision-making behaviour from the 1930s (Bengtson, Burgess, & Parrott, 1997). The theory suggests that people donate their time to a degree that they perceive they are being rewarded. A definition outlined by Lawler and Thye (1999) suggests that,

"Social exchange theory assumes self-interested actors who transact with other self-interested actors to accomplish individual goals that they cannot achieve alone. Self-interest and interdependence are central properties of social exchange. Whether it is two lovers who share a warm and mutual affection, or two corporations who pool resources to generate a new product, the basic form of interaction remains the same. Two or more actors, each of whom has something of value to the other, decide whether to exchange and in what amounts." (Lawler & Thye, 1999, p. 217)

However, when an imbalance is perceived between the contribution and the reward, the individual is more likely to move to a more equal state. Adding to this, if an individual perceives the rewards for volunteering are imbalanced to contribution, the volunteer is less likely to discontinue involvement (Sergent & Sedlacek, 1990). Hendricks (1995) applied this theory to aging to describe the exchange behaviour between individuals of different ages, and the shifting roles, skills, and resources that accompanies advanced ageing. Hendricks (1995) concluded that

"A central assumption in the social exchange framework is that the various actors (such as parent and child or elder and youth) each bring resources to the interaction or exchange, and that resources need not be material and will most likely be unequal. A second assumption is that actors will only continue to engage in exchanges for as long as the benefits are greater than the costs and while there are no better alternatives. Third, it is assumed that exchanges are governed by norms of reciprocity

when we give something, we trust that something of equal value will be reciprocated. The key concepts used in social exchange explanations include: social costs and benefits, social resources, social interaction/contact, reciprocity norms, social power, and altruism. (Hendricks, 1995)*"* (Bengtson, Burgess, & Parrott, 1997, p. 78)

4.4.3 The Functional Framework

Research by Clary, Snyder and their colleagues (Clary & Snyder, 1991; Clary, et al., 1998; Clary & Snyder, 1999) developed a functional approach based on Katz (1960) 'Model of Volunteers' which focused on the needs satisfied with volunteering. Table 5 describes the six major motives that govern behaviour in volunteers as identified by Clary, Snyder and colleagues.

Function/ Motivation	Conceptual Definition	Sample VFI Item
Values	The individual volunteers in order to express or act on important values like humanitarianism	'I feel it is important to help others'
Understanding	The volunteer is seeking to learn more about the world or exercise skills that are often unused	'Volunteering lets me learn through direct hands-on experience'
Enhancement	One can grow and develop psychologically through volunteer activities	'Volunteering makes me feel better about myself'
Career	The volunteer has a goal of gaining career-related experience through volunteering	'Volunteering looks good on my CV'
Social	Volunteering allows an individual to strength his or her social relationships	'My friends volunteer'
Protective	The individual uses volunteering to reduce negative feelings, such as guilt, or to address personal problems	'Volunteering is a good escape from my own troubles'

Table 5 - Functions served by volunteering and their assessment on the Volunteer Functions Inventory (VFI) (Clary & Snyder, 1999)

Clary and Snyder found a recurring theme through their investigations behind the motivations of volunteers. They found that volunteering did not depend solely on the person or on the situation they were in, but a complex mixture between the interaction of the person-based dynamic, and the situational opportunity that was offered to them (Clary & Snyder, 1999).

The motivation behind a why a person chooses to volunteer is complex and very subjective. Three theories have been discussed in this section. These included, Expectancy Motivation Theory, Social Exchange Theory, and Functional Framework. The next section will discuss the differences between volunteers and paid employees.

4.5 Paid versus Unpaid Employment

Volunteers are essentially different from paid employees, in that volunteer behaviour is less likely to be subject to the coercive power of money (Dawley, Stephens, & Stephens, 2005). The major reason for this is that volunteers are less likely to depend on organisational rewards than employees, who many depend on the income from the employer (Pearce, 1993). Also, volunteers are more likely to be part-time, and have a paid role with another organisation (Dawley, Stephens, & Stephens, 2005).

In the United States, another incentive has been implemented to encourage volunteerism, particularly in young adults, and that is the National and Community Service Trusts Act of 1993. This Act has been implemented to engage Americans in direct community-based service, and one of the key

components is the opportunity for individuals to earn awards of around US$5000 to be used for educational expenses (Winniford, Carpenter, & Grider, 1997)

Gaskin (1998) deduced that young people volunteers want opportunities that they can use to their advantage and collect experience for the future. One of the noted skills was leadership, and developing leadership skills.

4.6 Volunteers in Sport

In a report issued by the Australian Bureau of Statistics (2006) titled Volunteers in Sport found that about a third of all Australians over the age of 18 (5.2 million) volunteered for sports and physical recreation organisations. Adding to this, about 60% of them were male (2006).

In the United States in 2000, at least 20% of the 83.9 million (or over 16.5 million) of volunteers were involved in sports and recreation (Kim, Chelladurai, & Trail, 2007). Chelladurai (2006) has estimated that the economic worth of 'volunteering in sport' exceeds $50 billion in the United States (Chelladurai, 2006) of the total $213 billion volunteer industry.

Volunteers provide the core support for sport in the United Kingdom (Eley & Kirk, 2002), in the United States (Wymer & Starnes, 2001) and in Australia (Australian Government, 2005). In the United Kingdom, the Leisure Industries Research Centre (LIRC) in 1996 undertook the first major study of sport volunteers in the United Kingdom. The research was undertaken by LIRC and published by the Sports Council in October 1996. LIRC estimated the total annual value of the United Kingdom sports volunteer market to be in excess of £1.5 billion[2], with almost 1.5 million people contributing 187 million hours, which works out to be an average of 125 voluntary hours per person per year (Leisure Industries Research Centre, 1996).

However, a study in the United States showed that volunteering had declined from 1960 to 1995 (Cuskelly, 2004; El Nasser, 1997; Wymer & Starnes, 2001). There are a number of explanations for this decline in numbers, some of the major reasons was as a result of a one hour increase in the number of hours worked per week by the average American, and the need for people to work more than one job (El Nasser, 1997). In a study conducted by Cuskelly (2004), suggested three strategies for overcoming the decline in sports-based volunteer participation in Australia,

- Increasing recruitment efforts,
- Increasing the workload of current volunteers, or
- Retaining the current volunteers.

The third suggestion was found to be the most cost effective, as it is cheaper to retain the existing volunteers (Cuskelly, 2004) than recruit new ones (Kim, Chelladurai, & Trail, 2007).

Some of the findings from this report were that 80% of volunteers that contribute do so to clubs, with the other 20% involved in governing bodies and sporting events (from local community activities to national and world championships) (Leisure Industries Research Centre, 1996). School-based activities, in particular those involving children aged 7-12, are largely supported by volunteers (Eley & Kirk, 2002). The results of a study about valuing volunteers suggested that organised sport in the UK would be unviable without the support of volunteers (Leisure Industries Research Centre, 1996). Volunteer managers tend to fulfil multiple roles (Coleman, 2002). Table 6 shows that team selection

[2] This research used a national average wage (1995) of £8.31 per hour to value volunteer labour in UK sport, based on information provided by the Volunteer Centre 1995 (Coleman, 2002)

(99%) and coaching (74%) were two of the major roles undertaken by volunteer managers (for example 99% of Managers were Selectors, and 75% of them also Coach).

Position	Total	Also Selector	Also Coach	Also Secretary	Also Treasurer	Also Fixture Secretary	Also Committee
Selector	99%		75%*	36%	24%	45%	60%
Coaching	74%	100%		35%	26%	44%	63%
Secretary	36%	98%	72%		48%	69%	61%
Treasurer	24%	100%	81%	72%		61%	64%
Fixture Secretary	45%	99%	72%	54%	32%		77%
Committee	60%	99%	78%	36%	25%	57%	

Table 6 - Multiple Responses According to Roles Fulfilled by Managers (Coleman, 2002)

4.7 Summary

This chapter outlined what volunteers were, and they engage in the activity where they donate time and effort for the benefit of others (Wilson, 2000). Each national governing body had a slightly different definition, however, the spirit of the term stayed the same. The impact of volunteers was then investigated, and some of the findings outlined that many sectors of society would be unfeasible if it were not for volunteers, like the sporting field. The chapter then discussed the theories about what motivates people to volunteer, and some of the academic theories behind these behaviours. The theories included Expectancy Motivation Theory, Social Exchange Theory, and the Functional Framework. The difference between volunteers and paid employees was discussed. Then finally, how volunteers impacted local sport.

4.8 Summary of the Literature

The last three chapters have outlined and discussed the literature related to this thesis. Chapter Two discussed Information and Communication Technologies (ICTs), the Internet and Rogers' Innovation Diffusion Theory (2003). Chapter Three discussed Community Based Organisations (CBOs), and their role within society. This chapter discussed volunteers and how those individuals impacted on community.

When data is processed, it creates information and access to this information is a basic requirement for business creation, growth, and survival. Information is fundamental the success in any business.

Information and business go hand in hand, and is fundamental to the success to any business. From the use of information, comes the need for business to make extensive use of Information and Communication Technologies (ICTs). ICTs were shown to be a dramatic catalysis for high growth rates in the United States and Europe throughout the 1990s.

The Internet is a series of interconnected computer networks that span the globe. The Internet has given rise to e-commerce. E-commerce can be used to increase competition and lower costs of products by linking businesses via their computer networks. Benefits of the Internet include, improved business efficiencies, and the ability to reach a global market. However, there are also negative effects, like the digital divide 2.0, and costing issues.

To have these technologies implemented, there must be a process. This thesis will use Rogers' (2003) Innovation Diffusion theory to understand the adoption process. Innovation diffusion is the process that has an innovation communicated through certain social channels over a period of time to

members of a social system. This process is about having a new idea (or in this case, a technology) adopted (Rogers, 2003). The Innovation-Decision process is when an individual passes through five stages. These include gaining knowledge about an innovation, to forming an opinion about it, then to making a decision to adopt or reject the innovation. This is then followed by implementing it, then considering whether to continue the innovation's use on an ongoing basis.

Having an innovation adopted within an organisation creates some different challenges than at an individual level. This includes the type of decision process (optional, collective, or authority innovation-decision). The role of innovation champions plays a major part with the adoption of an innovation. Schön (1963) commented that a new idea either finds a champion or dies.

Local sporting clubs and associations are part of the umbrella term of Community Based Organisations (CBOs). The introduction of sporting programs, events and activities to the community is largely reliant on volunteers to devote their time and energy. Volunteers are generally the administrator of these clubs and associations, and their involvement is priceless for any of these organisations. However, the volunteer also receives enjoyment, recognition, and being of service to others in their community.

The literature has shown that CBOs and Small Businesses face similar barriers to the successful use of ICTs. One of the most significant barriers is the lack of ICT expertise and resources. However, despite these barriers, CBOs have still adopted these technologies.

Volunteers are people who donate their time and energy willingly, unpaid and for the benefit of others. Each national governing body had a slightly different definition of volunteering; however, the spirit of the term stayed the same. The impact of volunteers showed that many sectors of society would be unfeasible if it were not for volunteers, such as the local sporting sector. There are many theories that discuss the complex phenomena of why people volunteer.

This study looks to examine if the potential benefits of ICTs, and specifically Internet applications, are being realised by local sporting clubs. Do the barriers that hinder ICT adoption in CBOs also apply to their adoption of Internet technologies? Are the roles of volunteers in local sporting clubs influenced by or affected by the adoption of Internet applications?

4.9 Research Questions

ICTs and the Internet have given society many tools. This includes the ability to disperse information, converse with many people at once, and even process transactions. However can these advantages be used to assist with the administration roles of volunteers in sporting bodies. The primary aim of this study is to determine the Internet applications that are being adopted within local sporting clubs and to determine the adoption factors that affect both local sporting clubs and their members. The research questions of the study were,

- What are the areas where Internet applications are being employed (Research Question 1);
- What are the factors that drive the adoption of these Internet applications (Research Question 2); and
- What impact do these Internet applications have on the local sporting club and its members (Research Question 3).

The drivers and the impacts of Internet applications were integrated into a framework of Internet adoption for local sporting clubs. Rogers' (2003) Innovation-Decision Process presented the general framework which was modified for the study.

However, due to an absence of factors available in the literature to explain the adoption of the Internet in local sporting clubs, initial factors will be taken from the literature relating to the adoption of ICTs in businesses, particularly small businesses and CBOs. Similarly, there is little available literature targeting volunteer use of ICTs, so the impacts of ICTs on employees in businesses was be used for the initial version of the framework.

4.10 Research Framework

The research framework for this study is based on Rogers (2003) Innovation-Decision Process. The framework will be used as a basis for identifying how local sporting clubs have implemented the Internet (as an ICT) and the influences and tensions on them and their volunteers. Figure 2 illustrates the issues to be investigated in the framework. This diagram illustrates the issues (as highlighted in the literature review) that could affect the adoption of the Internet in local sporting clubs. The organisational factors that influence the adoption are the business impacts of ICT use, namely improved efficiencies, and reducing costs. Then the resource problems that hamper the adoption, such as lack of time, capital and expertise are listed as important factors to influence adoption. The 'Type of Sport' component has been incorporated as the researcher believes it is a factor. As an example, cricket is a complex statistical sport, whereas hockey and soccer are sports that are reliant on statistics. At the individual level, the factors that affect adoption are the employee use of ICTs, namely information overload and dehumanisation issues. Adding to this are the factors that affect volunteer use, such as volunteer motivation, and ICT champions. The researcher's experience in cricket has shown that 'Tensions' are the potential problems associated with forced adoption of ICTs from the organisation level to the individual level. This has sometimes caused problems such as information overload and information anxiety. The 'Influences' that are mentioned comprise of whether the ICT-led changes were driven at the organisation level, or championed from the individual level.

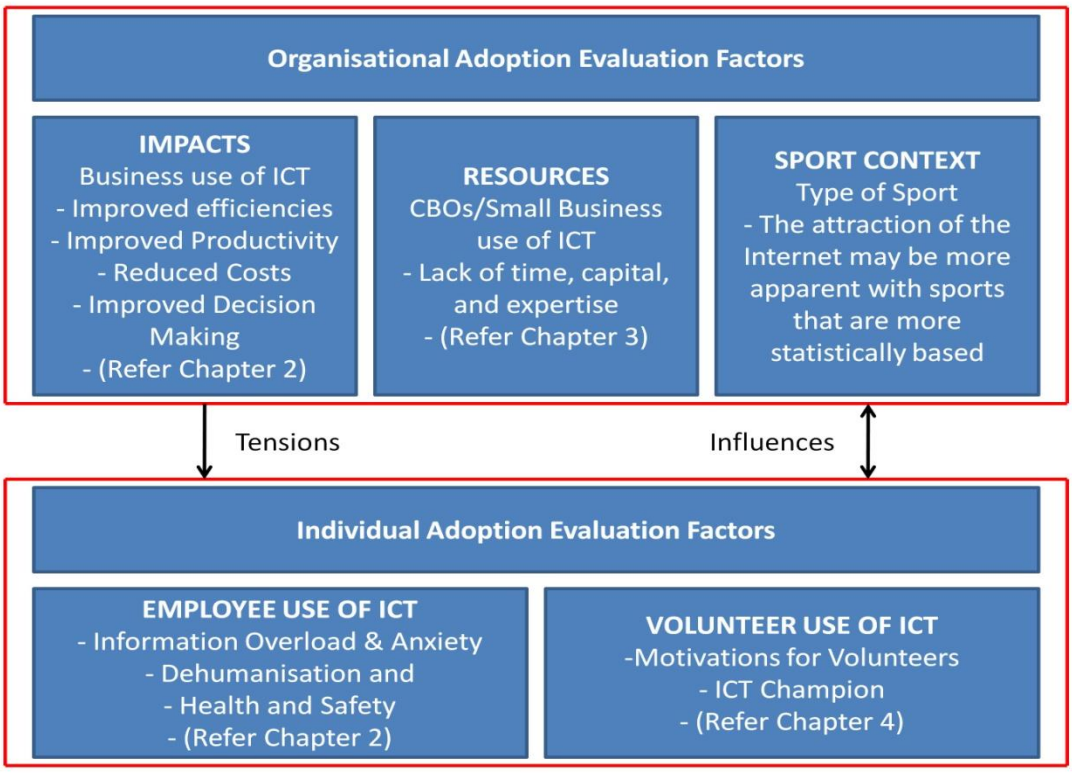


Figure 2 - Framework of Proposed Adoption Factors

The factors evident in Rogers' (2003) model have been linked with factors identified in the literature to produce the preliminary theoretical framework shown in Figure 2. The Rogers' (2003) Innovation-Decision Process explains how an individual (or organisation) passes through a number of sequential stages, from gaining initial knowledge, to forming an opinion towards the new idea, to making a decision to adopt it, to implementing the innovation, and then lastly confirming the decision (Rogers, 2003).

It is anticipated that examination of these factors at organisational and individual levels will identify influences in both 'directions' related to pressure to adopt Internet technologies and tensions (especially on individuals) related to the use of the technologies.

	Research Aims				
	← **Factors (RQ2)** →			← **What (RQ3)** →	← **Impact (RQ 3)** →
Roger's Stage	**Knowledge**	**Persuasion**	**Decision**	**Implementation**	**Confirmation**
Organisation (Local Sporting Club)		-CBO/Small Business Use of ICT -Type of Sport	-Top Down Influences		-Impacts of ICTs
Rogers's Stage Model (Features/ Characteristics)	-Awareness	-Relative advantage -Compatibility -Complexity -Trialability -Observability	-Accept -Reject	-Possible Tensions -Uncertainty?	-Reinforcement for decision -Dissonance -Discontinuance
Individual (Volunteer)		-Volunteer use of ICT	-Bottom up Influences -ICT Champion		-Employee use of ICT -Volunteer use of ICT

Figure 3 - Roger's Model of the Innovation-Decision Process combined with the Initial Framework

The Knowledge stage of the framework represents how the knowledge of the innovation was gained, either through the individual or the organisation. The next stage is the Persuasion stage. This identifies how an opinion about the innovation was formed. This stage relies on the factors that Rogers (2003) has identified. The Decision stage identifies how the decision to adopt, or not adopt was made. This will either be an organisational decision (Top-Down), or an individual decision (ICT Champion). The Implementation stage of the framework addresses how the innovation was implemented, and the possible tensions and implementation uncertainties. Then finally, the Confirmation stage highlights the impacts of the innovation have caused to the Individual, and/or the Organisation.

Sport plays a major role within the Australian, New Zealand and English culture and there are vast amounts of information to support player performance. However, there is little on club administration, and volunteer management at the local level of sport. With the advent of the ICTs (including the Internet), many efficiency gains can be achieved from a record keeping perspective. From the literature that has been reviewed, a framework has been developed that illustrates the tensions and influences that affect the club and the volunteer in relation to the adoption of the Internet.

The next chapter discusses the methodology used in this research.

5 Chapter Five – Research Methodology

5.1 Introduction

This chapter discusses the methodology used in this thesis. The chapter firstly discusses the philosophical approach of the research, and the differences between interpretivist and positivist perspectives. The next section describes the research method, followed by the data collection and approach to the analysis for each of the data collection phases. Finally, research limitations are discussed.

5.2 The Problem

ICTs and the Internet offer many advantages, such as information dissemination, communication between multiple people, and transaction processing. These advantages can be used to help the administration roles of volunteers in sporting bodies. The primary aim of this study is to determine the Internet applications that are being adopted within local sporting clubs and to determine the adoption factors that affect both local sporting clubs and their members. The research questions of the study were,

- What are the areas where Internet applications are being employed (Research Question 1);
- What are the factors that drive the adoption of these Internet applications (Research Question 2); and
- What impact do these Internet applications have on the local sporting club and its members (Research Question 3).

These applications, drivers and impacts were incorporated into a framework of Internet adoption for local sporting clubs. Rogers' (2003) Innovation-Decision process provided the general framework which was modified for the study. Rogers' framework not only provided the initial factors that were considered to affect such adoptions, it also outlined a series of stages which encompass the innovation process.

5.3 Philosophical Perspective

There are many research traditions followed in business research today. Some of these are positivism, postpostivism, critical research and interpretivism. Two of the more popular traditions in business research are positivism and interpretivism.

The primary differences between the positivist and interpretivist approaches are in the questions asked to collect data and the types of conclusions one wishes to draw from it. Lin (1998) suggested that both approaches look at the preferences, motivations, and actions. The positivist approach

"... attempts to document practices that lead consistently to one set of outcomes rather than another, to identify characteristics that commonly are related to some policy problem, or to find strategic patterns that hold across different venues and with different actors." (Lin A. , 1998, p. 162)

Adding to this, Bhattacherjee (2012) also suggests that theory and observations have a circular dependence on each other. While he suggests that this method uses theories that have been created via reasoning, they can only be verified through observations.

However, the interpretivist approach places an importance on peoples providing an explanation on their own situation or event (Veal, 2011). Lin (1998) adds to

"seek an understand of general concepts like "poverty" or "race" mean in their specific operation, to uncover the conscious and unconscious explanations people have for what they do or believe, or to

capture and reproduce a particular time, culture, or place so that actions people take become intelligible." (Lin A. , 1998, p. 162)

With this view, the interpretivist approach does not have 'value free' data. The data is gathered with the researcher using his or her own preconceptions to guide the process of research, and furthermore, the researcher interacts with the human subject which changes the perceptions of both parties(Walsham, 1995).

However, Lin (1998) also discusses the difference to each approach. She adds that the main difference between the two approach is that positivist research seeks to identify those details which offer propositions that then can be tested or identified in other cases. On the other hand, interpretive research seeks to combine those details into systems where the outcome is specific to that case. Lin (1998) said that;

"While both in the end can comment about general principles or relationships, positivist work does so by identifying general patterns, while interpretivist work does so by showing how the general pattern looks in practice." (Lin A. , 1998, p. 163)

This study can be considered to be interpretivist in nature. The conclusions that were drawn from this thesis are wide ranging, however are based on a set of deeply investigated case studies. The framework which is to be investigated was developed using the Innovation Decision process (Rogers, 2003), and customised with added detail from an extensive literature review and tested and refined with case studies.

5.3.1 Qualitative Versus Quantitative Research

Many researchers debate the relative merits of qualitative versus quantitative research. This debate suggested two things, firstly, that many researchers now accept the idea of two different, but equally legitimate, approaches to inquiry. Secondly, that in the final analysis of the research, the differences in the approaches does not really matter (Smith & Heshusius, 1986). The demand that an researcher be 'either/or' has been replaced with employing both approaches in combination, or to,

"Draw on both styles at appropriate times and in appropriate amounts." (Cronbach, Ambron, Dornbusch, Hess, Hornik, & Phillips, 1980, p. 223)

This research employs both qualitative and quantitative approaches will be described later in the chapter.

The next section will discuss the research method.

5.4 Research Method

The research method for this study employed the case study method, involving a number of cases. This approach was chosen as it fits with addressing such a complex phenomena as those posed by the research case. The factors are discussed further in this section.

5.4.1 Case Study

A case study is used to seek out and describe phenomena (Patton, 1990). Adding to this, Yin (1994) describes them as,

"An empirical inquiry that investigates a contemporary phenomenon within its real life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used." (Yin, 1994, p. 23)

Yin's definition of a case study can be put into practice. The *contemporary phenomenon* in this study refers to the use of Internet applications by sporting volunteers and associations. The context of *real life* is satisfied by the phenomenon affecting volunteers, and the influences and tensions that it causes. In this instance, *boundaries between phenomenon and context are not clearly evident* in this study as there are many different influences that affect adoption, and the level of Internet application uptake. Finally, the *multiple sources of evidence* is discussed in the forthcoming sections in relation to the use of multiple cases and data collection phases in each case.

5.4.2 Multiple Cases

This thesis employed a case study approach, with six sporting associations from around the world as each case. Yin (1994) recommends that the use of multiple cases as an endorsed method for studying inadequately understood phenomena in a real-world setting. In a case study, the researcher investigates a particular phenomena (or case) restricted by the activity and time (such as a process or a social group). Then the researcher collects detailed information by using a diverse range of data collection procedures (Leedy, 1997). For this study, the phenomena investigated are the local sporting associations. The activity and time is each sporting association organising a sporting competition amongst local clubs in a particular season.

Each sporting association can be considered a case study. These case studies cover international boundaries, metropolitan and rural classifications, and different types of sports (which was considered to be important by the researcher).

The researcher considers it important to discuss the unit of analysis within these case studies. The associations are made up of a group of clubs, which inturn are made up by a group of players. Thus to determine the how and why an association is adopting innovations, the club representative must be part of the data collection. Combining the responses of the club delegate (through interviews and surveys) will form the analyse of the association and how the influences that affect the adoption of innovations. Therefore the 'unit of analyse are the associations. The next section will discuss how the study will be conducted.

5.4.3 Unit of Analysis

According to Yin (1994), the unit of analysis in a case study is usually the phenomena that form the boundary of the case. However, Bhattacherjee (2012) suggests that case study research can simultaneously incorporate multi-level analysis, with different units of analysis, such as the individual, group and organisation.

This study adopts an approach similar to that described by Bhattacherjee, with the boundary of each case being sporting associations, but key multiple levels of analysis being the sporting clubs and club executives that make up these associations.

5.4.4 Methods That Were Considered

The most preferred method for analysing and explaining complex phenomena in this study was via the study case approach. However, a number of other methods were also considered, but then dismissed.

Grounded Theory

Sometimes a researcher can approach a problem with existing, well informed theory which is so accurate, that the researcher can concentrate on accumulating information applicable to that theory. However, many times, this is not the case. When the researcher will want to develop a new theory

which facilitates general discussion of the general features of a topic (Martin & Turner, 1986). The method of *grounded theory*, as per Glaser and Strauss (1967) it is;

"The discovery of theory from data." (Glaser & Strauss, 1967, p. 1)

This means the researcher initially approaches a phenomena with an open mind as to the kind of general theory that is likely to emerge. Once an adequate amount of data is gathered, the researcher can start to theorise about the relationships between the data (Martin & Turner, 1986). Whist it could be argued that this research did theorise about the relationships between the collected data, it did commence with a theoretical framework based on Rogers (2003) Innovation Decision process, so therefore grounded theory is not the approach method.

Ethnography

Ethnography is one of many research methods that can be found in social research. Although, the literature suggests there are no rules when it comes to the definition of 'ethnography' (Willis & Trondman, 2000). A common definition used is;

"It is a family of methods involving direct and sustained social contact with agents, and of richly writing up the encounter, respecting, recording, representing at least partly in its own terms, the irreducibility of human experience". (Willis & Trondman, 2000, p. 5)

This method is generally used to study individual behaviour, and only particularly applicable to this research as whole sporting associations were studied to identify how relevant innovations were adopted. Yin (1994) adds to this by noting that ethnographic research does not always involved case studies (and vice versa).

5.5 Conduct of Study

The conduct of the study occurred in a number of stages. The first stage was to review the literature in the area. As there is little literature relating to Internet adoption in local sporting bodies field, literature was taken from the community based organisation and business areas, and the use of ICTs by volunteers and employees. The next phase was to develop research questions and an initial research framework, and test them with the initial case study, which was Auckland Cricket Association. After the initial research round of data collection, the research framework was revised. This revised framework was then tested with five other case studies to produce the main findings and address the research questions. Figure 4 shows the conduct of the study over time. The main findings were discussed and the research questions were addressed.

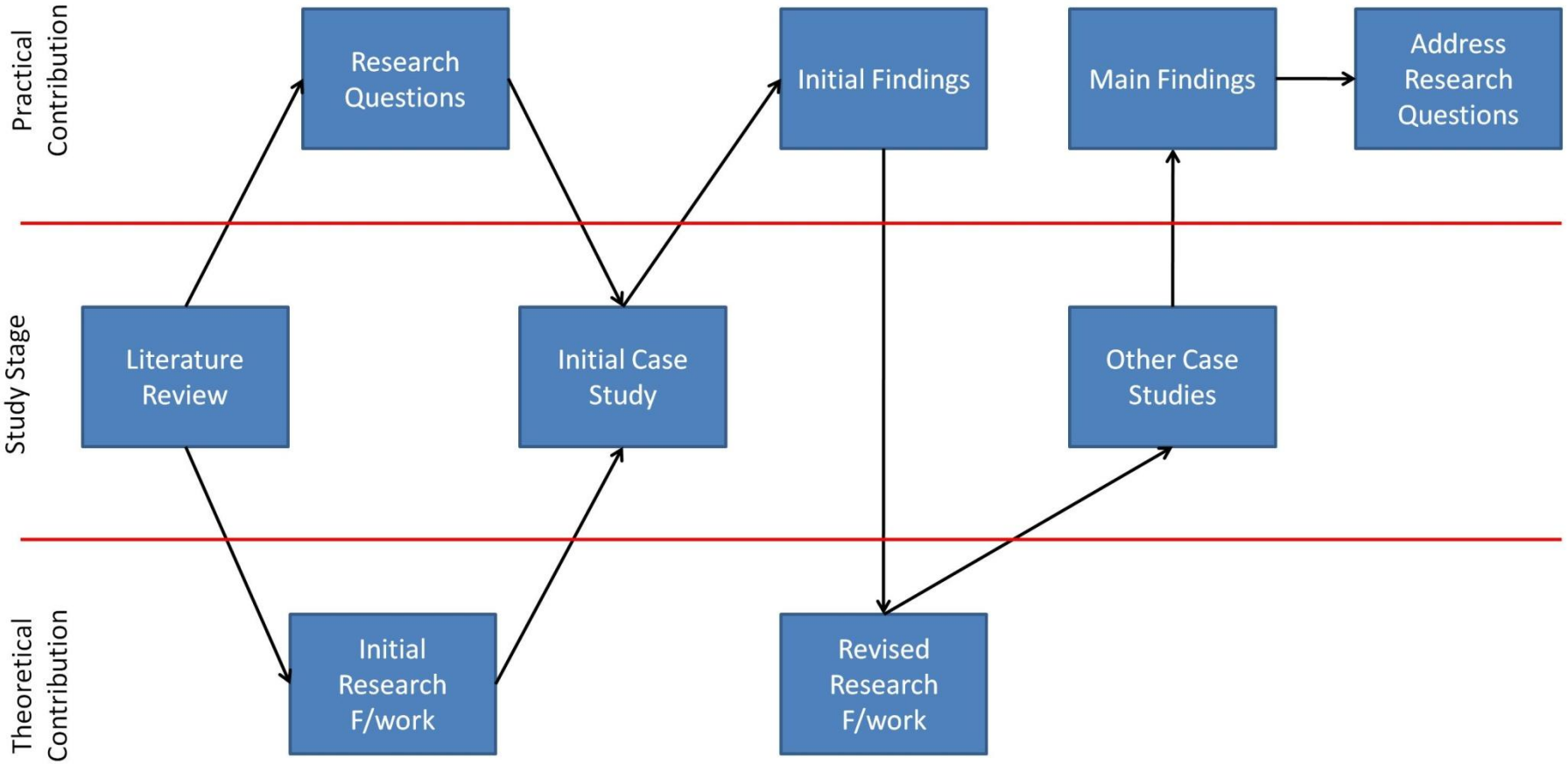


Figure 4 - Conduct of Study

5.5.1 Data Collection Techniques

The data collection stage of this PhD included six Associations from Australia, New Zealand, and the United Kingdom. This data collection stage also would have included data from the United States, however, when it was time to conduct the surveys, the researcher could not make contact with the President of the Association – so it was omitted. Nevertheless interviewed were conducted from a Las Vegas Baseball Association. The researcher would have liked to see the differences in the adoption of the Internet from another country (the United States of America), and another complex scoring sport like Cricket.

The approach taken to select where the data was to be collected was complex. The researcher wanted to have varying results that were not restricted by the same governing body, or set of local barriers. Therefore, having a mixture of locations and sports would overcome this problem. Australia was chosen mainly due to convenience as it is the home country of the researcher. Other factors where examined such as ready access to the Internet, the popularity of the sport in each country, and the ease of access to the sporting associations. Therefore, New Zealand and England were chosen

There were two phases of data collection, surveys and interviews. These phases were administered concurrently in each case. Four Internet applications are discussed in this thesis, these are Email, Club Website, Association or Third Party Website, and Online Statistics. The following sections will discuss each of them.

5.5.2 Internet Applications

This section introduces the Internet applications used in this research

Electronic Mail

This Internet application sends electronic messages from one person to another, or from one person to many. This was the only form of direct electronic communication investigated in this study. The clubs might use other forms of Internet communication to exchange messages, like Bulletin Boards or Social Networks, such as Facebook, however only email is discussed in this thesis. This application was chosen as it represents the communication space of the Information, Communication, Distribution and Transaction (ICDT) framework (Angehrn, 1997).

Club Website

A Club Website is when a club implements a website to disseminate information to their members or sponsors. There were two types of club websites that were investigated, an integrated website and a standalone website. The integrated website occurred when a sporting Association or commercial Third Party (an intermediary that supplies a service for a fee) has their own website, and in turn, provides each club with an area for them to set up a website (which was generally template driven). It is hosted by the Association or Third Party, but the club's web area is managed by the club. The stand alone website was used if the club had their own website, which was not linked to an Association or Third Party website. This application was chosen as it represents the information space in the ICDT framework.

Association or Third Party Website

An Association Website is a website that disseminates information to its member clubs. This website can be a standalone website, or be integrated with the online statistics package (see next section for details). The website is maintained by a sporting Association or third party. This application also represents the information space in ICDT framework.

Online Statistics

Online statistics refers to the use of an Internet statistical package to process the clubs' and associations' statistics. It is also used to upload match fixtures and competition ladders (standings) on the website. This application was chosen as it represents the transaction space in the ICDT framework.

Angehrn's (1997) distribution space was not represented as it is not used by local sporting bodies.

The next section will discuss the first data collection phase.

5.5.3 Data Collection - Phase One

Phase One of the data collection involved surveying the clubs within an association. In relation to the overall aims of the study, this phase determined the areas in local sporting club where Internet applications are being employed (Research Question 1).

Sport is generally organised at the local level with sporting clubs being part of an association. The first phase of data collection was undertaken at the **Club and Association level**. Sporting associations typically have regular meetings of delegates from their participating clubs. A delegate's meeting is when an association holds a meeting and makes it a requirement that a representative from each of their clubs is present. Associations were selected from different localities.

This thesis used highly structured surveys to build a picture of the Association. The researcher chose to conduct surveys at the association level to gain an overall representation of the level of adoption within each association. This process identified how far advanced each association was along the Rogers (2003) Innovation-Decision Process. Interviews or focus groups would have only shown what a narrow segment of the association was doing with these internet applications. Focus groups, interviews and surveys are discussed further below.

Focus Groups are,

"Are carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment…conducted with approximately 7 to 10 people by a skilled interviewer."(Krueger, 1994, p. 6)

The main advantage to focus groups is that they helps participants to develop attitudes and perceptions relating to a topic while interacting with other people. However, the disadvantages are that some participants may be dominated by others in the group and may not express their real views on the topic (Krueger, 1994). Another disadvantage is the need to have all of the participants in one place at the same time. Focus groups would not be appropriate for phase one as the goal of focus groups is to explain how people regarded an experience, topic or event. The goal of phase one was to determine the area were Internet applications are being employed by gaining the overall level of adoption within sporting associations.

Interviews are when an interviewer asks questions to a participant. There are many different types of interviews ranging from structured, to semi structured and unstructured interviews. Interviews are one of the most frequent methods used in case studies, and can be used to supplement survey data (Williamson, 2002). Semi-structured interviews were used in this thesis.

The main advantage of semi-structured interviews is that the interviewer has the opportunity to receive more complete answers by asking follow up questions. The respondent is encouraged to speak expansively on a topic (Slater, 1990). However, the main disadvantage is that interviews are

expensive in terms of time and money (Williamson, 2002). Additionally, interviewees are not suited to the need to quickly gain information about adoption across an entire association. Phase two of this thesis used interviews to gain a perspective on how the respondents are using Internet applications.

Surveys are the most common research instrument and are used to collect quantitative data, but open-ended questions can collect qualitative data as well. Surveys are widely used, however there are other techniques, such as structured, observations, content analysis just to name a few (De Vaus, 2002). The research employed structured surveys to build a picture of the Association. Surveys are used as they,

"Describe a particular phenomenon: its current situation, it properties and conditions" (Williamson, 2002, p. 91).

As mentioned earlier in this chapter, six associations were chosen from across three different countries. Added to this, three different sports were studied, cricket, hockey and soccer. Table 7 outlines the locations of the associations, the type of sport, the date of data collection, the number of clubs within the association, and the return rate of the surveys.

Table 7 - The Return Rates from the Surveys

Details	Auckland Cricket Association	North Metro Cricket Association	Colac Cricket Association	Home Countries Premier Cricket League	Geelong Football Association	Christchurch Hockey Association	Total
Country	**New Zealand**	**Australia**	**Australia**	**England**	**New Zealand**	**Australia**	
Locale	Metropolitan	Metropolitan	Rural	Rural	Metropolitan	Metropolitan	
Sport	Cricket	Cricket	Cricket	Cricket	Hockey	Football	
Date of data collection	May 2008	October 2008	November 2009	June 2009	September 2010	November 2008	
Number of clubs	9	25	17	12	20	17	**88**
Surveys Completed	**7 (78% of clubs)**	**20 (80%)**	**16 (94%)**	**12 (100%)**	**11 (55%)**	**17 (100%)**	**71 (81%)**

The method of recruitment for the Associations was via the Internet. Using the search engine Google.com.au, the researcher selected the city and the sport and searched for a local sporting association which was not a professional association. Once one had been selected the researcher contacted the Association president either via phone or email, and asked for their participation.

Once contact was made, the researcher generally visited the associations during a delegates meeting to administer the survey.

The surveys were distributed to club delegates at association meetings. This ensured a relatively captive audience and would provide close to a 'full population' for each association.

The surveys were developed by the researcher using Rogers' (2003) framework as a base. The questions tested for factors that affected the stages of Rogers' (2003) Innovation-Decision Process and the questions related to the factors identified at the local sporting club level. The survey questions were formatted into a flow diagram.

This was used to generally guarantee high return rates for the Association. Where possible, the researcher administered the survey personally at one of these delegate meetings. The researcher was mindful not to take up a lot of time in the meeting, as usually there were many agenda items. The researcher thought the best method of finding out what level in the Innovation-Decision Process (2003) clubs were at with using a survey in the form of a flow chart. Appendix One – The Survey and Interview Templates has a full copy of the survey questions. This avoided the need to ask the subjects questions that may not be applicable. The survey used one flow chart for each Internet application, with simple demographic questions at the start. Figure 5 is an example of the Email survey. The first part of the flow chart starts with asking the respondent if the innovation was adopted. If it had been, there was no need to ask questions regarding the Knowledge and Persuasion stages. Then it was only necessary to ask if they were in the Implementation or Confirmation stages. However, if it is not implemented it, it is necessary to determine if they were in the Knowledge or Persuasion stages.

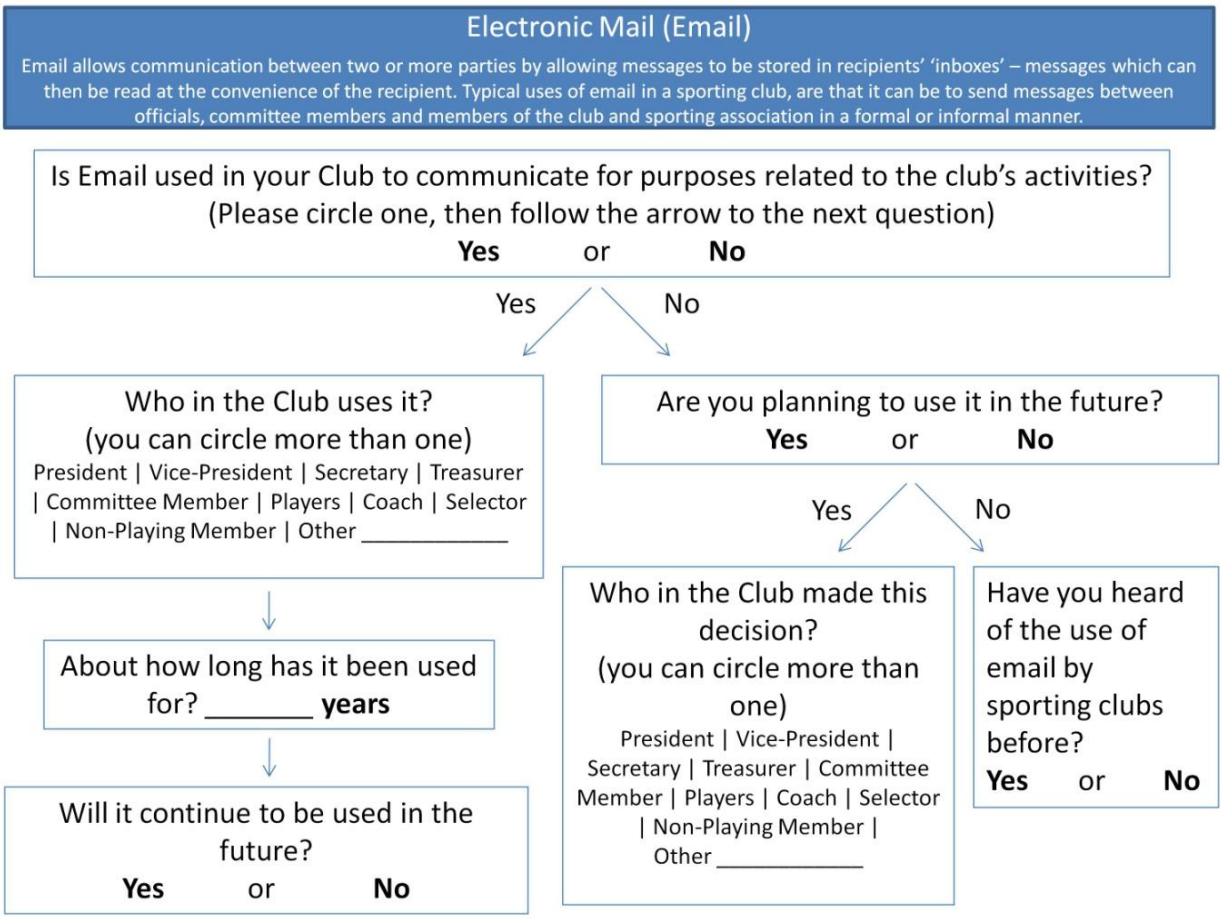


Figure 5 - Email Survey Questions

The next section discusses the analysis of the data.

Once the surveys were administered, the results were entered into the spreadsheet package, MS Excel. MS Excel was used to calculate the summary totals, and percentages from the survey.

The data provided some unique presentation challenges. The researcher was particularly interested in presenting the results of the research in a manner that would allow easy interpretation of the results and simple comparisons to be made. *Data Visualisation* is described by Industry Canada (2008) as being,

"The art, science and technology of presenting data/information in a manner, graphically, audibly, etc., which affords the viewer the greatest appreciation and understanding of the data/information content".

'I-D Map' is a term created by Bingley and Burgess (2009) to represent the proportions of clubs that have passed through a particular stage of Rogers' (2003) Innovation-Decision Process in relation to a particular innovation – in this case one of four different Internet applications. Each figure can then be mapped to its nearest percentile in the MS Word 'Gray' scale as shown in Figure 6, where the deeper shades represent higher occurrences of 'yes' respondents in the Innovation-Decision stage.

	Stages of Adoption			
Association	**Knowledge**	**Persuasion**	**Adoption**	**Confirmation**
Association 1	**100%**	**85%**	**85%**	**50%**
Association 2	**50%**	**25%**	**20%**	**10%**
Association 3	**70%**	**50%**	**40%**	**30%**
Association 4	**70%**	**60%**	**30%**	**30%**

Figure 6 - Sample Data as the I-D Map

Figure 6 is a fictional I-D map and indicates that Association 1 is more advanced with the adoption of the innovation when compared to Association 2. Also, it is possible to add the details of many more associations by simply adding rows to Figure 6.

On the last page of the survey, there was a 'contact' section for subject to voluntary fill in and apply to be interviewed. The next section will discuss phase two of the data collection.

5.5.4 Data Collection - Phase Two

In relation to the overall aims of the study, this phase determined the factors (at club member level) that drive the adoption of Internet applications (Research Question 2) and assessed the impacts of these Internet applications (Research Question 3).

Interviews can be placed upon a spectrum from highly structured to highly unstructured interviews (Cavana, Delahaye, & Sekaran, 2000; Collis & Hussey, 2003). The semi-structured interview can employ many open-ended questions and can be useful for uncovering and probing for information in exploratory studies (Cavana, Delahaye, & Sekaran, 2000; Collis & Hussey, 2003). Semi-structured interviews were employed in this thesis.

The researcher decided to undertake semi-structured interviews for this phase, as this method would give him a much more in depth discussion of the topic. This method was chosen instead of surveys, as they were employed in phase one, and focus groups. Kitzinger (1995) explains that Focus groups are,

"Particularly appropriate when the interviewer has a series of open ended questions and wishes to encourage research participants to explore the issues of importance to them, in their own vocabulary, generating their own questions and pursuing their own priorities."(Kitzinger, 1995, p. 299)

Unfortunately, focus groups require participants being in the same location, which was not feasible in this study.

The aim was to interview two members of a committee in two clubs for each association (four interviews per association). However in some associations, there were more club delegates interviewed. Table 8 shows the breakdown of the number of interviews conducted.

Table 8 - The Interview Breakdown

Details	Auckland Cricket Association	North Metro Cricket Association	Colac Cricket Association	Home Countries Premier Cricket League	Geelong Football Association	Christchurch Hockey Association	Total
Date of data collection	May 2008	October 2008	November 2009	June 2009	September 2010	November 2008	
Number of interviews	5	4	4	4	3	5	**21**
Number of Clubs	**3**	**2**	**3**	**2**	**3**	**3**	**16**

The interviews were conducted with different volunteers from the sporting clubs according to the management structure for each club, and the questions related to the stages of Rogers' (2003) Innovation-Decision Process. The interviews consisted of interviewing either one or two members of a club committee, with two or three clubs investigated within an association. Interviews were not recorded and their analysis involved content analysis where themes relating to the identified factors have be identified. A copy of the interview template can be found in Appendix One – The Survey and Interview Templates. Once an interview was complete, it was 'written up' in MS Word, analysed and categorized into themes.

The results for the interviews were analysed for each application, with themes categorised and entered into aspects of the framework. The questions were based on the stages of Rogers' Innovation-Decision Process. This showed how each aspect of the process either came from an organisational level (such as the association), or an individual level (such as a club member). Each response to a question was classified as being a positive, or a negative, influence to adoption and for continued use.

The researcher has made the distinction between 'negative' and 'positive' with the following assertions. If the interviewee had a pessimistic experience, albeit might have been a positive influence on adoption, the researcher classed this as a negative influence. According to the Rogers (2003) a negative incentive occurs as follows,

"Most incentives are positive in that they reward a desired behaviour change (such as adoption of a new idea), but it is also possible to penalise an individual by imposing an unwanted penalty or by withdrawing some desiderata (Latin for desired things) for not adopting an innovation." (Rogers, 2003, p. 237)

Another distinction that needs to be made between organisational versus individual influences. The definition that the researcher has used is who the influence has affected, the individual or the organisation.

The next section will discuss the ethics approval and the research limitations.

5.6 Ethics Approval and Limitations

As this research project interacted with people, and handled data that was not in the public domain, the researcher had to gain ethics approval came from the Committee of Victoria University Human Research Ethics Committee. This was achieved at the end of 2007.

When arranging interviews with clubs, the process was random and generally relied on the willingness of the club delegates supplying their details for interviewing. However, as this was reliant on club representatives donating their time, it was possible that only the more highly developed clubs who were after extra information about how to make their clubs better wanted to be involved. Therefore, some of the less developed clubs (probably in a technological instance) may have felt less compelled to be involved in the process. The researcher tried to overcome this limitation by interviewing a number of club delegates different clubs in each association.

Another limitation was not receiving a survey from all of the clubs in the association. Although the return rate was quite high, the surveys that were not returned did cause some minor inconsistencies with the results. This was shown in the Auckland data, when the survey results returned 100% of club adopting a club's website. However, two of the clubs interviewed did not have a club website. When the researcher asked one club about this, the club delegate replied that he did not fill out a survey. To reduce the effects of this limitation, the researcher collected data from multiple associations.

Another possible limitation was having the results generated in one region. This is a limitation as the main drivers and barriers may only isolated to one association, and may not be generalisable. This problem was reduced by collecting data in metropolitan and rural areas, and from Australia, New Zealand, and England.

The last main limitation was the type of sport, and not being able to generalise the results to other sports. This is a limitation as one sport might have a governing body willing to invest in complex Internet applications, and another advocating the use of a third party system. Therefore, the influences might be different. This was reduced by collecting data from three different sports.

5.7 Summary

This chapter discussed the methodology for the thesis along with the research questions. This study employs a case study approach using multiple case studies. The phases of data collection, analysis and presentation were outlined for the surveys and the interviews.

The next chapter will discuss the sports investigated, this includes Cricket, Hockey, and Football. Then it will outline the structure of local sport.

6 Chapter Six – Description of Sports

6.1 Introduction

This chapter provides an explanation of how local sporting clubs are administered. This chapter will outline a 'typical' club administration structure and the roles of the volunteers involved. Then it will explain the different scoring structures to demonstration how the sports differ in their statistical needs.

6.2 A Typical Local Sporting Club Committee Structure

This section explains the 'typical' setup of a sporting club, and describes the roles of the people on the committee. Most non-profit amateur sporting clubs and organisations are administered by volunteer boards and executive committees. They contain elected, appointed, invited or self-selected members who are responsible for the operations of the organisation (Doherty, Patterson, & Van Bussel, 2004). At a local, or community level, non-profit amateur sports clubs rely more or less exclusively on volunteer administrators (Doherty & Carron, 2003). Members of these committees are, as Shibli, Taylor, Nichols, Gratton, & Kokolakakis (1999) call them, '*Systematic Volunteers*' who *"...have a clearly defined role and are required to make a regular commitment to the operation of the club."* (Shibli, Taylor, Nichols, Gratton, & Kokolakakis, 1999, p. 10)

6.2.1 Roles within the Sporting Club

All organisations need a management structure. To create such structures, roles need to be assigned to members. The typical roles within local sporting clubs are described.

The Executive Committee

The executive committee at a sporting club generally includes the President, the Secretary, and the Treasurer (whose roles are outlined later in this section). This group is entrusted with the day-to-day running of the club. This includes representing the club to the local council, to the association, and to the members of the club (Government of Western Australia, 2009). These are the club delegates the researcher intends to interview.

Committee Member

The committee member of a sporting club is responsible for the promotion, and the protection, of the clubs interests within the local community and amongst its members. Typically, there are at least two committee members on the committee board. This will mean the executive committee (made up of the President, Secretary and the Treasurer) will be joined by the two committee members to give a committee board consisting of an odd number of members. Therefore, there will always be a clear vote within the committee board (Government of Western Australia, 2009).

President

The President of a sporting club is responsible for the overall annual committee agenda, helps the committee prioritise its goals, and keeps them from straying from the overall structure of a successful committee. However, at an operational level, the major task of the president is to assist in running effective committee meetings (Government of Western Australia, 2009).

Vice-President

The Vice-President of a sporting club is generally a role that is filled by a regular committee member, however is seen as a level above a committee member. The Vice-President's role is help, and support, the President, and to fill the position when the President cannot do so (Sports Council Wales , 2007).

Secretary

The Secretary of a sporting club (sometimes referred to as the general manager) has many roles and duties to fulfil. The smooth running of a club depends on how the Secretary handles the records,

messages, and other communications. The main purpose of the position is principal administrator for the club. The Secretary provides the link between members, the executive committee and outside agencies, like other clubs, the association, national and state bodies, the local council and the media (Sports Council Wales , 2007).

Treasurer

The Treasurer of a sporting club is ultimately responsible for insuring that the finances of the sporting club are organised, and managed, through a specific, separate club bank account (Sports Council Wales , 2007).

Coach

A coach of a sporting club is an important position. Coaches are in charge of the on field performance of the club, and is generally responsible for player development. The coach will generally report to the committee on matters such as, but not limited to, coaching resources, player selection matters, and general on field performance of the club. The definition of a coach is,

"Person who instructs or trains players in the fundamentals of a sport and directs the team strategy" (Pike Masteralxis, Barr, & Hums, 2005, p. 452)

Assistant Coach

An assistant coach of a sporting club aids the coach in the on field performance of the club. Assistant coaches will help to organise training and match day preparations. If they are not players they can also watch games and offer advice to the coach (Government of Western Australia, 2009).

Social Committee

The social committee of a sporting club is in charge of the social events of the club. This committee must organise events that are all inclusive for the players and members. Social events are generally fund raising occasions but are also designed to encourage social networking between players and members. Such social events can include trivia nights, end of season presentation night, and even end of season player trips (Government of Western Australia, 2009).

Team Captain

The team captains of sporting clubs are players that are in charge of their team during a match. They will organise the team on match day, and decide on tactics for game. (Government of Western Australia, 2009)

Player/Member

A Player, or Member, of a sporting club is the reason why a sporting club exists. These are people who generally pay a membership to be part of the club and enjoy benefits like being able to play sport within that club (Government of Western Australia, 2009).

6.2.2 Sporting Club Structure

A sporting club's structure may vary from club to club. The titles may be different, and there might be more members involved in the running of the club. However Figure 7 shows a typical structure of a sporting club, with the administration of the club on the left hand side, and the playing side on the club on the right. The administration of the club is generally overseen by past or present players, and/or members.

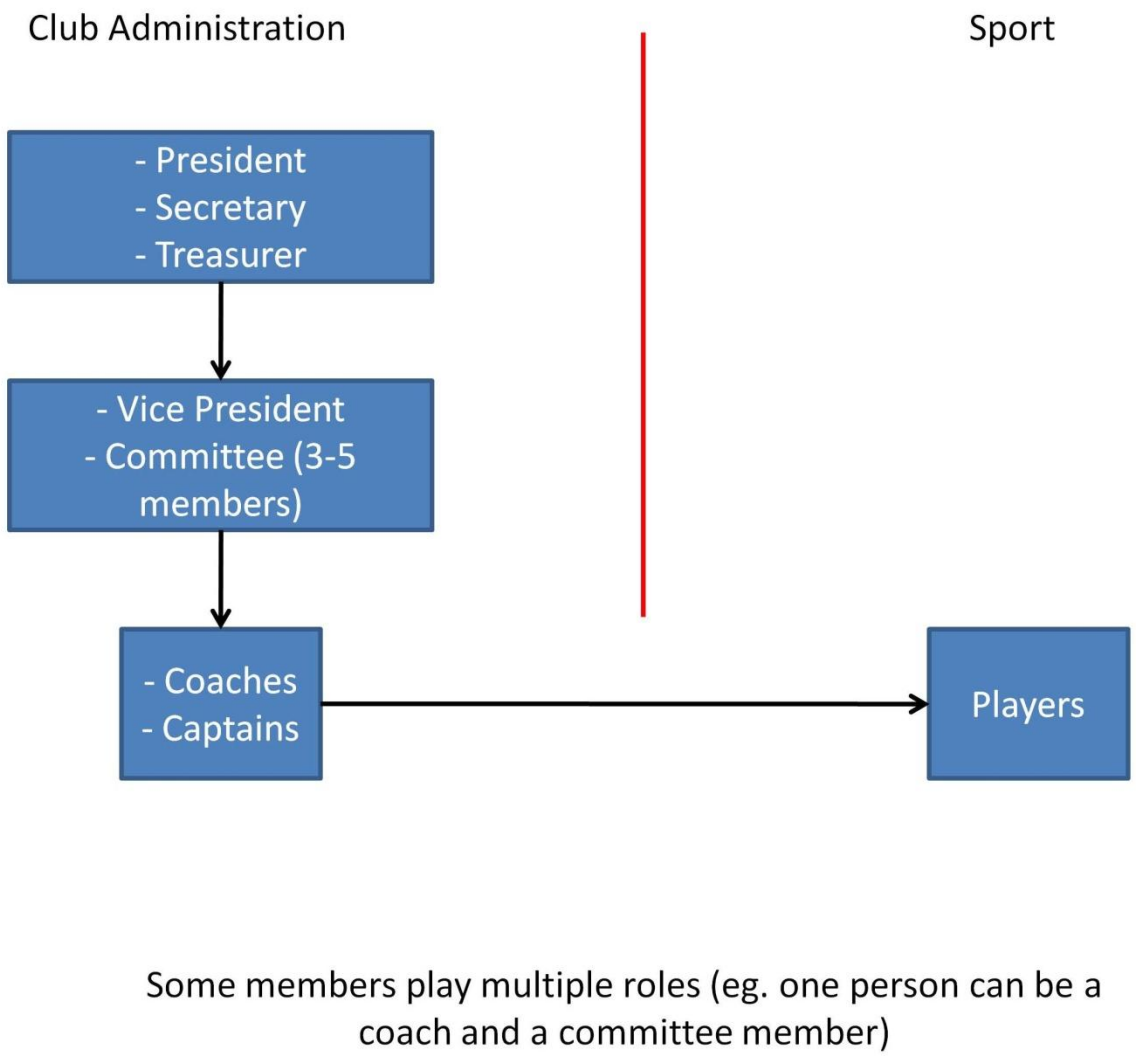


Figure 7 - The Structure of a Typical Sporting Club

6.3 Sports in this Study

There were three types of sports analysed in this study, cricket, hockey and soccer. These three sports were selected as they demonstrate two ends of the statistical spectrum. Cricket, like Baseball, is a sport that involves complex scoring and recording. Every delivery, or ball, is accounted for on the scorecard. However, hockey and soccer have simple scoring structures. Generally, only match results, player penalties, and goal scorers are recorded. This is explained later in this chapter.

6.3.1 The Countries Examined, and their Regional Standings

The data for the data collection chapters were collected from six different sporting associations within Australia, New Zealand, and England. This covered a variety of sports, and demographic areas. Having a variety of countries, sports and demographic areas would stop cultural and technological influencing the final framework. The breakdown of sports and demographic areas are as follows in Figure 8.

Sport	Country	Metropolitan/Rural	Date Data Collected
Cricket	Australia	Metropolitan	February-2009
Cricket	Australia	Rural	May-2009
Cricket	New Zealand	Metropolitan	May-2008
Cricket	England	Rural	June-2008
Soccer	Australia	Rural	September-2010
Hockey	New Zealand	Metropolitan	December-2009

Figure 8 - Break down of the Data Collected

6.3.2 Cricket

When played at the highest level, Cricket is predominantly played in Commonwealth countries (such as Australia, New Zealand, England, Pakistan, India and South Africa). Cricket has some similarities with Baseball as the winning team scores the most runs and there are a set number of innings involving a team batting and a team on the field (with positions reversed at the conclusion of an innings). At the top level, a game of Cricket can last five days (a 'test match'). However, local Cricket clubs predominantly play shorter versions played over two days or even a few hours. A local Cricket match in Australia will typically take place over two Saturday afternoons, with each team usually having one innings on each day.

The scoring for Cricket is complex. Every ball bowled by a bowler (a 'delivery'), and every 'run' by the Batsman makes must be accounted for. Figure 9 demonstrates a typical Cricket scorecard for one innings of a match. The top third of the page keeps track of a batsman's score. Every time a batsman scores a run, it needs to be marked against the batsman's name (which is blocked out in this example), and if they are 'dismissed[3]', their method of dismissal is also noted.

The middle of the scorecard is set aside for the team's total runs. Every time a run is scored, it is marked on the card. The lower third of the scorecard is for the opposition bowlers. Each delivery bowled by the opposing team is recorded with a corresponding symbol that represents the outcome of the delivery. This is a tedious process where the scorer needs to update the scorebook every time a ball is bowled, and then twice more if the batsman makes a run.

[3] This is when a batsman is given out. This can be through being bowled, caught, runouts or stumped.

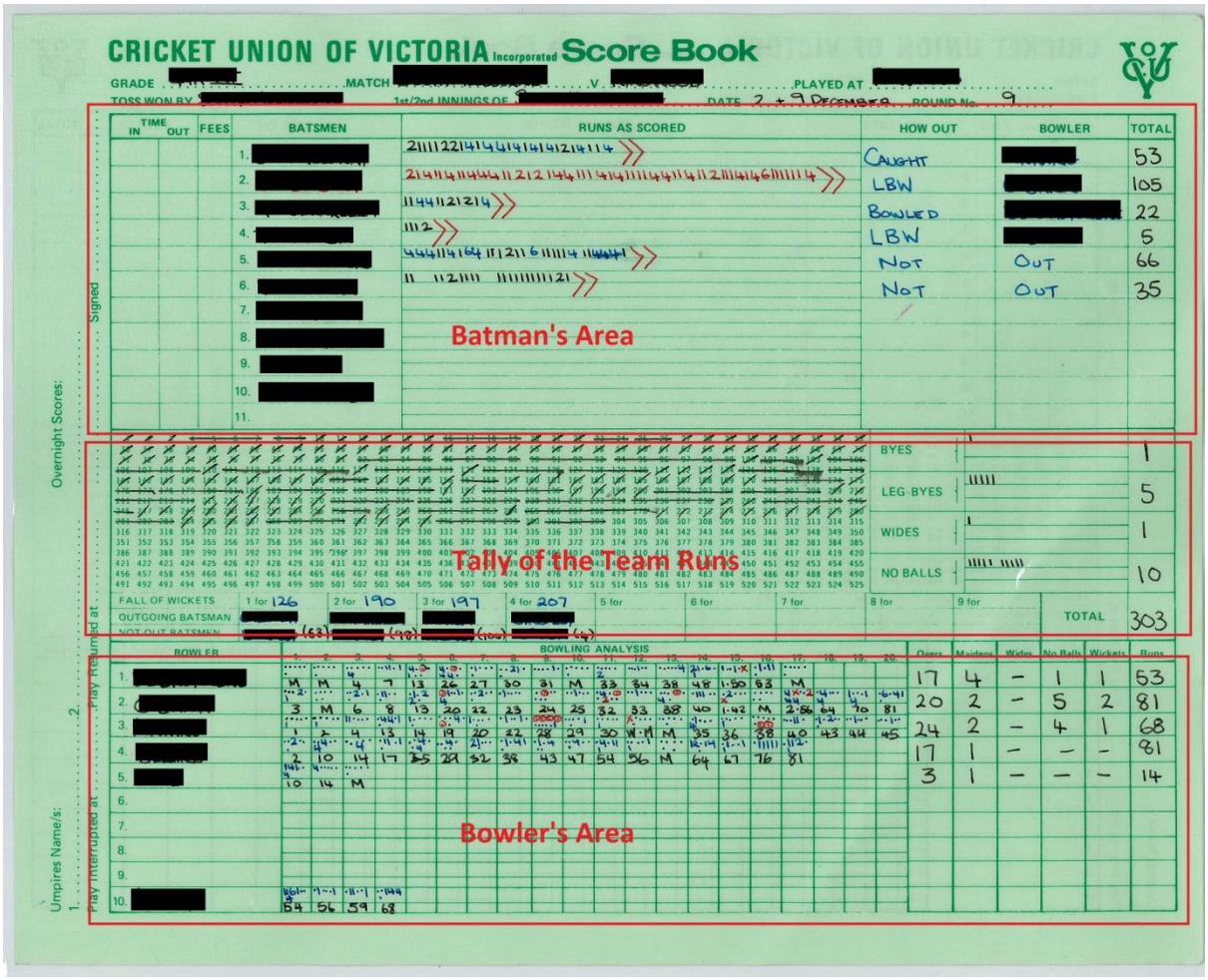


Figure 9 - A Typical Cricket Scorecard for One Innings of the Match (Bingley, Scorecard)

Australia

In Australia, the game of cricket is played at a number of levels, national (in 'tests' between countries), state, and local.

At the state level, there are three competitions, the Sheffield Shield (a four day game competition), the Ford Ranger Cup (a one day game competition), and lastly, the 20/Twenty Big Bash (a game that lasts approximately three hours) (Cricket Australia, 2011).

When the first English team toured Australia in 1892, the Earl of Sheffield was present as the tour promoter. After Australia won the series 2-1, the Earl of Sheffield donated £150 to the New South Wales Cricket association to fund a trophy for an annual tournament of inter-colonial Cricket between New South Wales, Victoria, and South Australia. The competition commenced in 1892-93, some 15 years after the first international game between Australia and England (Cricket Australia, 2011).

International one day Cricket was first played in Melbourne in 1971. This form of the game only lasts one day, (about 8 hours), and has seen the innovation of coloured clothing (compared to the white, or cream clothing of Test Cricket) (Cricket Australia, 2011).

The introduction of Twenty/20 Cricket has been significant in the last few years. After the first international Twenty/20 match in 2005, there is now an International World Cup and a rebel

competition in India. Australia has its own domestic Twenty/20 competition, (Cricket Australia, 2011).

England

England is the home of Cricket, and there is a reference to Cricket as far back as Edward I in the 1300s when a game like Cricket was being played in the county of Kent. However, the more widely accepted version is which originated in the sheep-rearing South East of the country, where the short grass of a paddock made it possible to bowl a ball of wool, or rags, at a target. The target was generally a wicket-gate of the sheep pasture, and it was defended by a bat in the form of a shepherd's crooked staff (English and Welsh Cricket Board, 2011).

By the 17th Century, the game had become quite popular as a rural pastime. However, it was during the 18th Century when middle classes started to take up the sport that the game flourished. At this time, the game was being played at every level of society. However, without a coherent set of rules. In the 1760s, the first and most influential Cricket club in England was formed in Hambledon, Hampshire. The Hambledon Cricket Club established batting and bowling techniques which are still used today (English and Welsh Cricket Board, 2011).

The centre of power soon shifted to London with the founding of the Marylebone Cricket Club (MCC), which had its headquarters at the Lord's ground in London. In 1835 the MCC gave Cricket its first formal laws, which still stand largely intact today (Britain Express, 2000).

Cricket in England is governed by the English and Wales Cricket Board, which was established in 1997 to be a single national governing body for all Cricket in England and Wales. Below this national level are 18 first class counties that play three formats of the game, Twenty/20, One Day Cricket, and 4 four Cricket (English and Welsh Cricket Board, 2011).

New Zealand

Much of the sport played in New Zealand reflects its British colonial heritage, with some of the most popular sports in New Zealand, namely rugby, cricket and netball, being primarily played in Commonwealth of Nations countries (Sport & Recreation New Zealand, 2010).

Men's cricket in New Zealand is split into six provinces, comprising Auckland, Northern Districts, Canterbury, Otago, Central Districts, and Wellington. In addition, each province has one team in the national competition where they compete for three different trophies. Firstly, the State Championship (formerly Plunket Shield, and Shell Trophy) is the longer form of the game, which generally lasts up to four days. The second competition, the State Shield, is played over one day. And finally, there is the more recent Twenty/20 State League. All of the competitions run concurrently during the spring and summer months (from October to March). Hockey

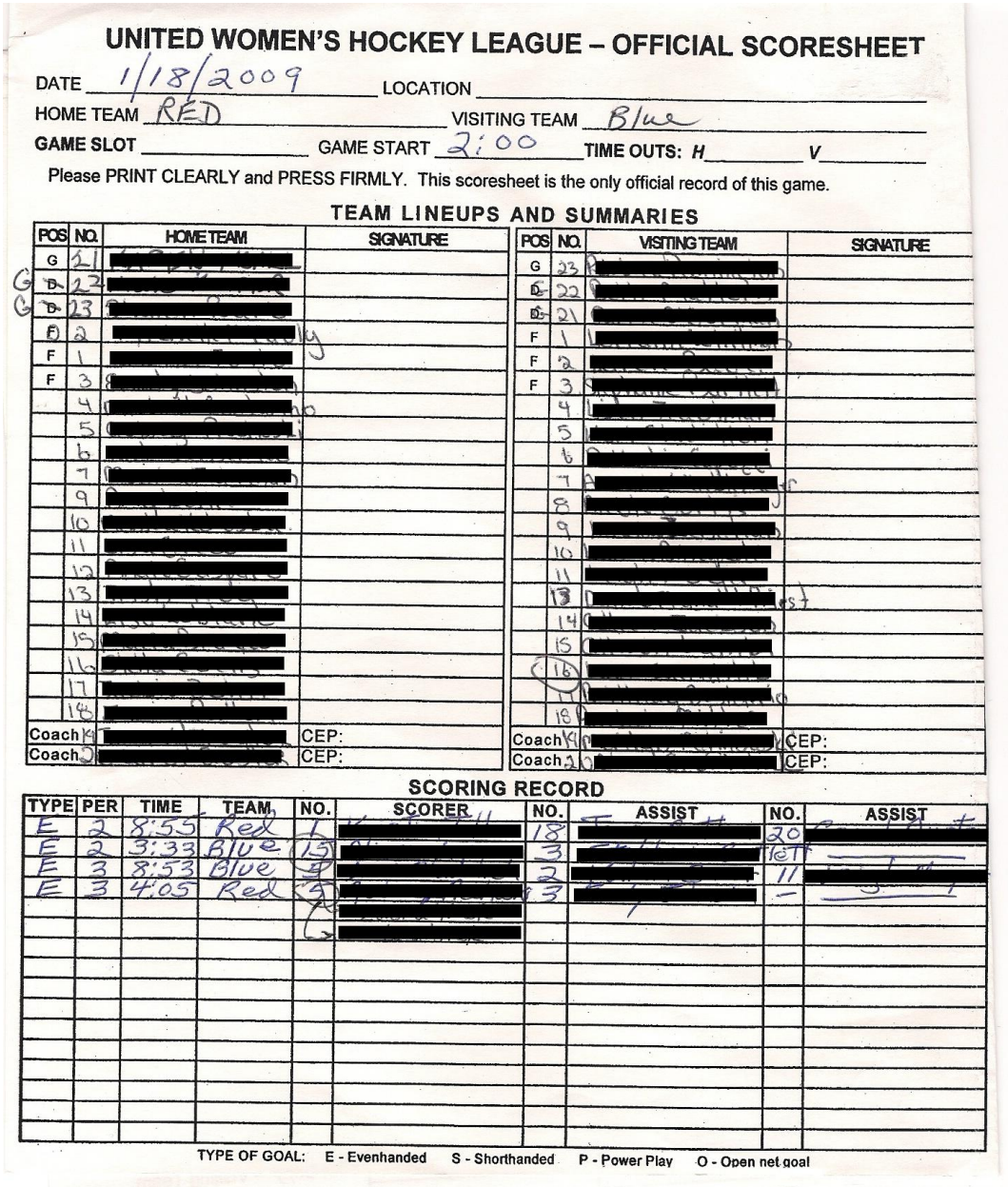
Hockey is thought to be oldest sports in the world. Hockey, like other games involving bats and balls, has been call 'paganica' (Romans), 'hurling' (Irish) and 'shinty' (Scottish) has been played for thousands of years. (Department of Immigration and Citizenship Australia, 2006).

The rapid expansion of hockey through the last couple of centuries has been credited to The British Army. This has seen it being played on every continent, with 114 nations affiliated with the International Hockey Federation (FIH). The FIH is the governing body that manage the major tournaments and oversees the activities of the five continental federations. These continental federations conduct regular qualifying tournaments, through which national teams can progress to

compete in events such as the Olympic Games, the World Cup, the Champions Trophy and the Commonwealth Games (Department of Immigration and Citizenship Australia, 2006).

Hockey is a game where players attempt to hit a ball into a set of goals with hockey sticks. A game involves two teams that compete for control of a ball with the aim of scoring a goal. The game is played in a similar manner to soccer. There are 16 players on a team, however only 11 can take the field at any one time, with one of them being a goalkeeper. A game of Hockey generally last about 70 minutes.

Figure 10 is a post game Hockey score card that shows the names of the players (blocked out in this example), and the goals scored. The first half of the scorecard is the team sheet of the match. This lists all of the names of the players involved in the game. The bottom half indicates the time of the goals scored, and who scored them. As can be seen, compared to the Cricket scorecard, this sport is not as complex.



UNITED WOMEN'S HOCKEY LEAGUE – OFFICIAL SCORESHEET

DATE 1/18/2009 LOCATION

HOME TEAM RED VISITING TEAM Blue

GAME SLOT GAME START 2:00 TIME OUTS: H V

Please PRINT CLEARLY and PRESS FIRMLY. This scoresheet is the only official record of this game.

TEAM LINEUPS AND SUMMARIES

POS	NO.	HOME TEAM	SIGNATURE
G	1	[redacted]	
D	2	[redacted]	
D	23	[redacted]	
F	2	[redacted]	
F	1	[redacted]	
F	3	[redacted]	
	4	[redacted]	
	5	[redacted]	
	6	[redacted]	
	7	[redacted]	
	9	[redacted]	
	10	[redacted]	
	11	[redacted]	
	12	[redacted]	
	13	[redacted]	
	14	[redacted]	
	15	[redacted]	
	16	[redacted]	
	17	[redacted]	
	18	[redacted]	
Coach	K	[redacted]	CEP:
Coach	2	[redacted]	CEP:

POS	NO.	VISITING TEAM	SIGNATURE
G	23	[redacted]	
D	22	[redacted]	
D	21	[redacted]	
F	1	[redacted]	
F	2	[redacted]	
F	3	[redacted]	
	4	[redacted]	
	5	[redacted]	
	6	[redacted]	
	7	[redacted]	
	8	[redacted]	
	9	[redacted]	
	10	[redacted]	
	11	[redacted]	
	13	[redacted]	
	14	[redacted]	
	15	[redacted]	
	16	[redacted]	
	17	[redacted]	
	18	[redacted]	
Coach	K	[redacted]	CEP:
Coach	2	[redacted]	CEP:

SCORING RECORD

TYPE	PER	TIME	TEAM	NO.	SCORER	NO.	ASSIST	NO.	ASSIST
E	2	8:55	Red	1	[redacted]	18	[redacted]	20	[redacted]
E	2	3:33	Blue	15	[redacted]	3	[redacted]	left	
E	3	8:53	Blue	9	[redacted]	2	[redacted]	11	[redacted]
E	3	4:05	Red	3	[redacted]	3	[redacted]	—	

TYPE OF GOAL: E - Evenhanded S - Shorthanded P - Power Play O - Open net goal

Figure 10 - A Typical Hockey Scorecard (United Women's Hockey League 2009 Season Scorecard)

New Zealand

Hockey in New Zealand is administered by a national governing body called Hockey New Zealand. This national body overseas the administration of 32 Associations through New Zealand which provide the infrastructure to allow players to compete from school level to the national level.

6.3.3 Football (Soccer)

Football (or Soccer) is known as the world game, or the beautiful game, across the globe. This game is played between two teams of 11 players with a round ball. The aim of Football revolves around kicking the ball (or football) into the rectangular goal (24 feet wide by 8 feet high). The laws of the game were originally codified in England in 1863. And since then, Soccer is played in over 200 countries, by over 250 million people, making it world's most popular game (Encyclopædia Britannica, 2008; Dunning, 1999).

Most countries have their own national team, and National Associations. These national teams compete for a place in the Fèdèration Internationale de Football Association (which translates to the International Federation of Football Association, or simply FIFA) World Cup. The World Cup is made up of 32 national teams which compete over a four week period. This tournament was established in 1930, and has been played every four years (except for the war time years of 1942 and 1946). Brazil has won the most titles on five, next followed by Italy (four), and Germany (three).

Figure 11 is a typical scorecard for a game of soccer. The referee is in charge of this and keeps record of the goals, the cautions (yellow cards) and dismissals (red cards).

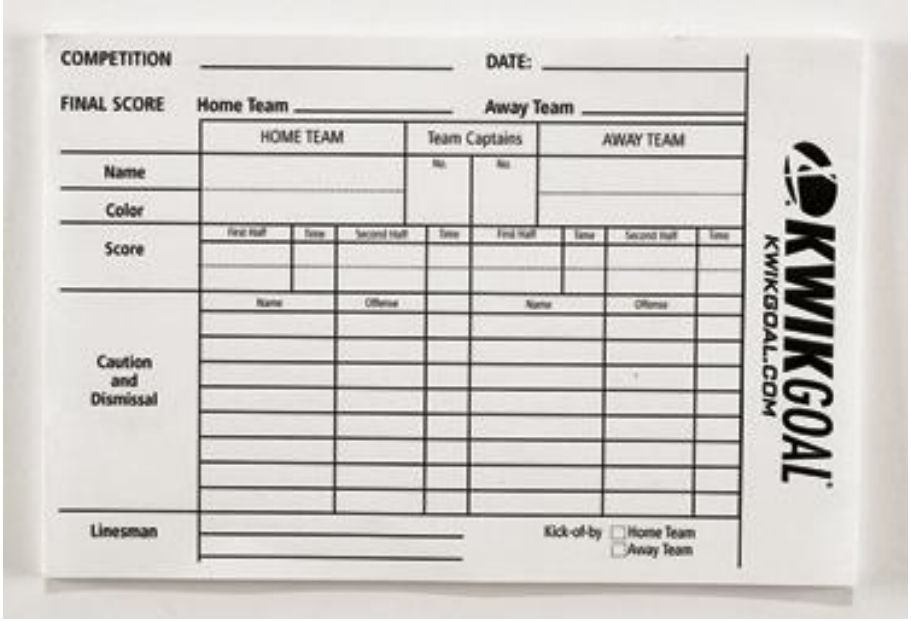


Figure 11 - A Typical Soccer Referee's Scorecard (Kwik Goal 2009 Umpire Card)

Victoria

The early years of soccer in Australia were influenced by English and Scottish immigrants. British players were supplemented by migrants from all over Europe in the post-war period in the 1950's and 1960's. This immigration transformed soccer across the country (Football Federation Victoria, 2011).

The Federation conducted its first competition in 1909 with Carlton United being declared the inaugural First Division Champions. The name of the competition was changed to the State League in

1958, and later became the Premier League in 1990, a name it retains until today (Football Federation Victoria, 2011).

6.4 Summary

This chapter explains how sporting clubs function, and the typical roles of volunteers on their committees. The management of most clubs are quite similar around the world, and these processes have evolved over hundreds of years. The sports chosen for this study were selected with a number of factors in mind. These factors include (but were not limited to) the popularity of the sport, the level of data captured during games and the corresponding statistical recording requirements. Therefore, cricket was selected as it has a high level of participation and a complex scoring system. Hockey and soccer were selected on the basis of their popularity around the world, and their simple scoring requirements.

The next chapter discusses the first round of data collection.

7 Chapter Seven – Round One of Data Collection within Cricket Clubs

7.1 Introduction

This chapter will focus on the data collection of the first sporting association analysed in this PhD, employing the research framework. The association is in Auckland, the capital of New Zealand. The data collection involved an association wide survey and interviews with committee members of clubs in the association.

7.2 Auckland Cricket Association

Based in New Zealand's capital city, the Auckland Cricket Association (ACA), is one of the six major associations responsible for managing and developing Cricket in New Zealand. ACA is made up of 14 principal (or major) and 10 standard (or minor) cricket clubs that provide club Cricket coverage for the whole Auckland region. Minor cricket clubs were used for this study, as they fitted the scope of the research. All of these minor cricket clubs are essentially volunteer run and administered. However, although the major teams do have a full time manager, they still rely on volunteer help to run effectively.

7.2.1 Data Collection

This was the first attempt at data collection for this PhD. It ran more smoothly than the researcher was anticipating as the response rate to the surveys was good and interviewees were keen to be interviewed. Due to the timing of the data collection, the interviews were conducted *before* the survey was administered. This was primarily because the researcher was in Auckland for a conference before the association meeting (where the surveys were administered) was held. The researcher firstly made contact with the president of the association, and asked him for his help with the survey and whether it was acceptable to conduct interviews with its clubs. Once the researcher was in Auckland, the interviews were conducted and subsequently a meeting with association representatives was arranged. At the meeting, the surveys were handed to the representatives with instructions on how to administer them during a meeting of association club delegates. However, the association instead decided to send the surveys out with their yearly mail out of documentation to the clubs, and asked for them to be returned. Most clubs (70%) returned the survey. There was a high response rate for a mailout as the association president mailed out the surveys to the clubs. Surveys to organisations typically receive substantially lower return rates than surveys to individuals, with 15% sometimes considered an acceptable return rate (Hager, Wilson, Pollak, & Rooney, 2003; Baldauf, Reisinger, & Moncrief, 1999; Tomaskovic-Devey, Leiter, & Thompson, 1994).

Although the association has only nine clubs; it is quite old with the average age of clubs being about 75 years. The oldest of the clubs was a remarkable 150 years (founded in 1858), especially so since the site for the city of Auckland was not decided upon until 1840, and the ACA was not formed until 1883. The youngest of the clubs was still nearly four decades old (founded in 1970), which suggests that the association provides a stable environment for clubs to compete in. The roles occupied by the survey respondents were General Managers (six respondents), Secretary (one), Committee Member (one), Coach (one), and Chairman (one). Note that it was possible for a respondent to fill multiple roles at a club. The gender break down of respondents was one sided, with six males and one female.

Figure 12 provides a summary of the results of the surveys. The left side of the figure portrays the proportions of clubs at different stages of adoption (according to Rogers Innovation-Decision process) for each application:

- Email ('Email' in Figure 12)
- Club Website ('CW')

- Association or Third Party Website ('Assoc')
- Online Statistics application ('Stats')

For instance, Figure 12 shows that all clubs had known about and been persuaded to adopt an online statistics application, but only 71% had actually adopted the application and reached confirmation stage.

Respondents to the survey were also asked to describe who in the club actually used the applications on an ongoing basis. In other words, who was using the application at the confirmation stage? The right side of Figure 12 shows the proportion of members in 'administration' roles (President ('Pres' in Figure 12); Vice President ('VP'); Treasurer ('TR'); Secretary ('Sec'), Committee Member ('Comm')) and the proportion in 'Competition' roles ('Coach' or 'Player'). For instance, Figure 12 shows that online statistics applications were mostly used by coaches and players (in 57% of clubs).

Stages of Adoption					**Confirmation Stage**						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Email	100%	100%	100%	100%	57%	0%	71%	85%	85%	100%	57%
C W	100%	100%	100%	100%	71%	57%	85%	71%	85%	100%	100%
Assoc	100%	100%	100%	100%	71%	42%	0%	57%	57%	71%	71%
Stats	100%	100%	71%	71%	42%	28%	0%	0%	28%	57%	57%

Figure 12 - I-D Mapping from the Surveys and who uses each Application

The results from the surveys are discussed below.

Email

All of the clubs used email as a communication tool and suggested that they would continue to use email into the future. Thus, all of the responding clubs were in the Confirmation stage. The average time the clubs had been using email was eight and a half years, with the longest being 15 years (since 1993), and the shortest only three years (since 2005).

Generally the treasurer, the secretary and the committee members of the club were the most prolific users of email (for administrative use) followed by the president.

Coaches at all of the clubs used email, whist it was used by the players at four of the seven responding clubs.

Club Website

As with the Internet Communication Application, all of the responding clubs had a club website, and indicated they will continue to use one into the future. The average amount of time each club had a website was seven and a half years, with the longest being 15 years and the most recent being one year. The club that had a website for one year had only been using email for three years, whereas the club that had a website for 15 years had been using email for the 15 years as well. All of the clubs indicated that they intended to use a website into the future.

From an administrative viewpoint, treasurers and committee members mostly used the club website, followed by secretaries and the president. Players and coaches at all responding clubs used the club website.

Association or Third Party

Once again, all of the clubs used the association website, and all of them indicated they will continue to use it into the future. The average amount of time that the clubs had been using the association or a third party website was just over eight and a half years, with the longest being 20 years and the shortest one year.

From an administrative viewpoint, the clubs that are in the Confirmation stage nominated that the presidents were the most frequent users of the association's website. This was then followed by the secretaries and committee members on 57%, followed by the vice presidents. The treasurers did not use the association's website at all. A possible reason for the treasurers not using the association's website was that they were more concerned about the finances of their own club, and have no real need to use the association's website.

Coaches and players from five of the seven responding clubs used the association website.

Online Statistics

This is the only Internet application tool that did not have a 100% uptake of responding clubs in the Adoption and Confirmation stages. There were two clubs that were planning to use it, and had made the decision to do so. This means that the two clubs were past the Persuasion stage but not yet into the Adoption stage. All of the other clubs were already in the Confirmation stage and intended to use online statistics into the future. The average length of time of use was almost six years, with two clubs recording they had used online statistics for ten years and the shortest, one year (since 2007). The club that had only used it for one year was the most recent club for using this Internet Application.

Of the people using this application, it is surprising there was so little uptake by all members. As far as the administration of the clubs, only the president (in 42% of clubs), the vice president and the committee members (both in 28% of clubs) used it. This might be because only a small number of clubs had members who were extremely interested in the statistics, and the rest of the club took a passing interest at best.

A little more than half of clubs reported that coaches and players used online statistics. The reasons for this may be that they might have been accessing the information a different way, either by someone printing them out and displaying them around the club (so the rest of the players can read them), or they are not that interested in their performances from a coaching or playing viewpoint.

Summary of the Surveys

This seems to be a fairly advanced association in relation to adoption of these Internet applications – with email, club websites and association or third party websites being used by all of the clubs and online statistics by most of the clubs. The club website is the application most widely used by people in administrative roles, followed closely by email and then the association or third party website. A similar pattern exists with those in playing roles. Coaches at all clubs used email and the club website and players at all clubs used the club website.

Figure 13 illustrates how long in years each of the clubs have been in the Confirmation stage with electronic mail (email), club website (CW), an association or third party system (Assoc), and online statistical program (Stats). There may be a suggestion that for many clubs once one of the applications are adopted, the other applications are adopted soon after. For instance, club two had only been using the four applications for only a few years, whereas club five adopted all the applications ten years ago. Club 3 and 7 may be exceptions. This will require further examination through the later analysis.

There are a few missing data elements. Club 1 and Club 4 are not in the confirmation stages for Online Statistics, and Club 7 did not enter a date for email use.

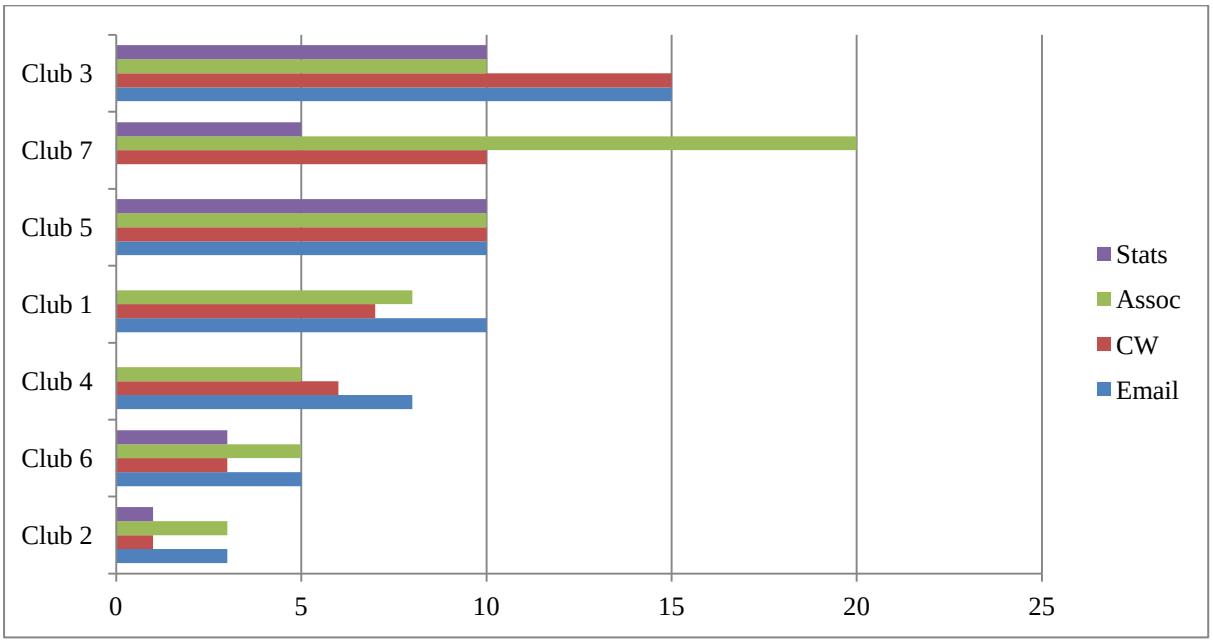


Figure 13 - The Amount of Years Each Club has used an Internet Application

Interviews

This phase of the data collection involved interviews with five members from three of the nine clubs. The interviews were conducted with members of the committee of their clubs, who generally had an appointed position, such as treasurer or secretary.

As mentioned, all of these interviews were conducted before the survey was administered as the researcher was in Auckland on a conference in 2008 and conducted these interviews at that time.

Club 1

The first of these interviews was conducted in the meeting room at the office of the former Secretary, and the second was performed after hours at the home of the current Secretary in the outer suburbs of Auckland.

Both interviewees had been with the club for more than a decade. However, each understood and made use of technology in a different manner. Both interviewees were aged in their 50s. The former Secretary worked within the ICT area and was still a member of the club committee. He previously filled the role of secretary for ten years. The current Secretary was a tradesman, and had been "around the club" for 19 years (generally as a member of the club committee). Their backgrounds were consistent with how familiar they were with a list of typical computer terms. These technology terms, such as 'the Internet', 'standard desktop applications' (like MS Office), 'blogs', 'networking', and 'gigabyte', were used to see how familiar the interviewees were with standard computer technology. The current Secretary was familiar with half of them, whereas the former Secretary was familiar with all of them. The club had implemented some systems with regard to Internet communication applications, association or third party website, and dealt with game statistics through an Excel spreadsheet.

Email

The difference in the amount of technological knowledge between the two interviewees is highlighted in this section. The former Secretary went from using email at home and at work, to using it at the cricket club. He said that they "use email to inform, share information, and to schedule meetings. They (the committee) can send email instead of physically meeting". However, when he was asked about how he learnt about it, he said that "everyone knows about it, it is a part of life, and the young members grew up with it (email)". His level of familiarity was from working in the ICT industry. Asked whether they had to change the way they performed tasks, he replied "certainly, before we used the telephone and had physical meetings, now we have reduced that. We have faster communication and faster decision making". As he worked in the industry, it was not difficult for him to learn email and he had a chance to trial it in the work place. Thus, he did see email in operation before using it at the cricket club. He did not say that he was involved in the decision to adopt it, he suggested that "it just evolved, when we started 15 years ago, it (email) was the exception, now it is the norm". He was not directly involved in the decision, but did help the process along by using it. When asked if they would continue to use it in the future, he said "certainly, it is convenient and saves time".

On the other hand, the current Secretary said that he was one of the people responsible for introducing the innovation. He said "as the secretary, it is my duty to create an (email) address book for each team captain, this way I can email each team easily and quickly". He used the innovation to communicate to the captains, and then in turn have the captains pass on the messages on their players. Unlike the former Secretary, he found out about using email at a presentation that was hosted by the Team Development Manager at the ACA that explained how to use it and why. Now the Team Development Manager sends out information to each of the secretaries electronically. He said that email was "very convenient, because beforehand you needed to call each person and if you do not get them, you needed to keep calling until you do". He found email to be a 'timeless' communication tool. However, using email did not change the way they communicated. This comment seems to be a contradiction. If he has changed his communication tool to a text based message, instead of a voice message over the telephone, does this not change the way he communicates? The former Secretary added that "if a player did not have email (or they do not use it), you still need to ring them". However this *is* a change, as calling them by phone is now the 'plan B' option, and the former Secretary regarded email as a type of communication that is the "norm and not the exception". As someone who does not work in the ICT industry (like the current Secretary), he did find email difficult in the beginning to use, and only used it for Cricket, and he commented that the ACA send out policies via email. He did not have a chance to trial it or see it in operation beforehand and he had to learn about it at home. He was involved in the decision to adopt, because "the secretary is the most important role in the club; he is the person who communicates between a third party (the association) and the Cricket club". Asked whether the club will keep the system, he answered with "absolutely, ease of use".

Club Website

Although all of the clubs that returned surveys had a club website, not all the clubs were surveyed. This was one of the clubs not surveyed. Only the current Secretary commented on this Internet Application. The club did not have a club website. He did want one, however "they don't have time to set it up". He suggested that if they had one, it "would have player records, history, events and news". He knew about having a Cricket club website through other clubs having one, as, "everybody knows about having a website". He wanted a website because everyone seemed to have one, and not for the possible marketing or promotion opportunities. He had a chance to "try out" a Cricket club website by "jumping onto another Cricket club's website". The remaining interview questions were not

applicable as although they have passed the Decision stage, they have not reached the Implementation stage.

Association or Third Party Website

From the outset, the use of association website was generally imposed on clubs by the association (the ACA) and they had little input into the process. The former Secretary said that "there was no control over the website", and when asked how he, and the club, used the Association website, he answered that it "provides information on games, fixtures, update scores and they (the association) can send information". The association's website has an option for clubs to host their own club website. This means they would have some space granted to them on the Association's website and are allowed to modify their own website 'space' themselves. He found out about the association website when a person from the association came to a meeting and told them about it. However only club members, or committee members, of the association could access it, and they required a user name and password. The former Secretary said that the benefits of the association website were quite clear. Before the website, the association had to mail out forms and make telephone calls. The communication channels went from the ACA to the club secretary to the players. Now because of the website, the way of communicating information had changed. As he was already working in the technology industry, the former Secretary had little trouble understanding it. He said he had a chance to try out the association's website before it was implemented, and it had evolved over time. The association's website "came from the association and the clubs made some suggestions later on". As the current Secretary at the time, he did not choose to adopt it, he had to. He said that there was a time where no one in the club used it, but he had shown them how to use it since. The former Secretary would continue to use it, however it only showed summary information and he wanted it to go to the next level (where player and match statistics would be provided).

The current Secretary had no involvement in the setup of the association website, suggesting that "it was done from above". He used the association website to contact the Team Development Manager at the ACA on behalf of the club and for details of club affiliation fees. The association informed him about the website, and he saw a key benefit of it as faster communication. The website changed the way he communicated with the association, as before communication was through letters and telephone calls. Although not technically minded, he found the website to be very straightforward. Unlike the former Secretary, he did not have a chance to try it out or see it in operation before it was in use, he said that it was "just implemented". This is because it was implemented before he was club secretary. If he was offered a choice, he believed he would keep it, because it makes it "easy to communicate".

Dealing with Game Statistics

Although not programmed as an Internet application, the club used a Microsoft Excel spreadsheet to handle match statistics. The former Secretary was involved in the set up of the spreadsheet, however not all of the teams in the club adhered to the same data format. This meant that the data had to be reformatted before it was incorporated into a master spreadsheet. He said that they used it to keep track of players' statistics. Before they started using the spreadsheets they used to calculate overall player performances manually at the end of the season. However, most of the players at the club knew about Excel: "there are many accountants at the club". He said that the benefit of using a spreadsheet was "that we have added some new statistics we did not record before, like fielding[4], and we can analyse them now, Excel makes it easier". They have changed the way they do things now in that they

[4] Fielding is the action players of collecting the ball after it is hit by the batsman. The fielders will try to either limit the runs a batsman scores, or dismiss them by catching the ball, or 'running them out' (similar to Baseball).

record the statistics after the game instead of at the end of the season, and they have added more detail (like modes of dismissal of batsmen). Since he used Excel every day at work, he said it was not difficult to understand it. He was one of the drivers for its adoption in the club, so he "played around with it before it was implemented to make it easier". One of the factors that led to this adoption was that entering the scores at the end of the season "became cumbersome, so we adopted Excel". He said that although system was much better, they wanted to move from an "ad-hoc spreadsheet system to an online web database".

On the other hand, the current Secretary said he was not involved in the set-up of the spreadsheet, and that the "captains email the stats to the secretary, then the statistics are sent to the committee and then they are reformatted to another master spreadsheet". The system was already set up by the time he became the secretary, however he agreed that it was "easy to access, easy to fix and communicate to the committee". It changed the way they have recorded the match results and players statistics, as in the past it was very time consuming and all of the data entry was carried out by the secretary. One of the difficulties he has had is when he "sets up a database (spreadsheet), you need to know who played in where" (which member played in which team). Although the spreadsheet was used by the previous secretary, he had "played with it to make it better". He was involved in the decision to adopt it, however it was a committee decision, and he was part of the committee. If he had a choice, he would continue to use it, as it "was too hard to do it by hand".

Club 2

Only the treasurer was interviewed at this club, and he was aged in his 30s. He was an Engineer, and he was familiar with the list of technology terms. Within the club they used Internet communication (mainly email), a club website, and the association or third party website. They also used a third party record keeping system called *NZ Online*. This website is run by New Zealand Cricket, and is a central database where game results and individual statistics are kept. However, the system is optional and this club was the only club the researcher spoke to that used it. This is a national website, so this club enters the game results separately into the ACA website (mandatory), and then separately entered the game results and player statistics into the NZ Online website (optional). The NZ Online system is free, has an option for players to pay their membership fees online, and allows player profiles to be setup with their batting, bowling and fielding statistics posted online.

Email

When asked whether he was involved in the set up of the club email, the Treasurer replied "yes, I am the IT guy of the club", and they used this innovation for sending results, communications of club events, various emails and team information. He first found out about using email at work. As mentioned earlier, the benefit the club gained by using email is essentially ease of communication. Their processes had since changed from the use of email. He believed they "are more efficient, and the communication (message) is getting through". He mentioned that the advantage of email was it that left a paper trail and that often verbal messages were lost. Email was not difficult for him to understand as he worked in the industry, and because of that, he used it for work and personal use beforehand. When asked about the factors that lead to the decision to adopt, he replied "it happened organically, we all saw gains in the workplace". In the future he will continue to use it because "it is easy to communicate to people while leaving a paper trail, it is traceable, and everything is in writing".

Club Website

The club website was based on an option provided by the national governing body who provided each club with a template to set up their own website. It was hosted by the national governing body but the

club's 'area' was managed by the club. The website also provided access to all of the player's statistics and all of the game results. New Zealand Cricket held a seminar to explain the idea and maintained that it was optional for clubs to implement. This was also how he found out about the innovation. The club used the website to record club history, player statistics and events. The major benefit that it provided was that "if a player leaves, and goes to another competition, all of their statistics go with them". Before this website, all of the statistics were calculated using Excel. However, with this website, each person received a login and a password to access the site. The players then can access information (such as their statistics and club events), and have it sent to them via email. The researcher examined the website after the interview and found it was possible to browse the website without a login, and even look up a club or individual's details. However its use is still in its infancy. The Treasurer wanted more freedom to alter the content for the club website. At the time, the website was only text based and the administrator could not insert pictures. He found use of the website to be very straightforward. However, this may be because he works in the ICT area. He did have a chance to try it out for "a couple of weeks" before the season prior to it being implemented (beta testing). The club will continue to use it, because "it is very central and there is more room for upgrades".

Association or Third Party Website

The Association website that was discussed is the local ACA website, and not the national NZ Online website. When asked if he was involved in the setup, the treasurer said "no, they did everything, and asked for suggestions later". He uses it for player statistics, the match fixture (however, not that often), and a player registry. However, a player must register online to be able to view the data. The Treasurer commented that he found out about it in much the same way as the NZ Online website. He went to a seminar and was told about it. Nevertheless he wanteds the two systems integrated. He suggested that the benefits that it provided were that it was possible to look at the statistics online (only games results, not player statistics), and see the results of the other teams. This is because lots of smaller clubs used it instead of building a club website themselves. However the bigger clubs generally have their own websites, and would find it too hard to integrate or convert them. When asked whether the online system had changed the way he performed his task, he said "no, I have always done the stats. Last year it was implemented, it is just putting them online that is different". However, to the researcher, that *is* a change. He did not find it difficult, as he worked in the ICT industry. He was not involved in the decision to implement it (this came from the Association), and he definitely wanted to keep using it, as the information was now centralised.

Dealing with Game Statistics

This club did not use online statistics. The Treasurer did know about using the Internet (and ICTs) to process the game statistics, so the club was not yet at the Knowledge stage.

Club 3

There were two people interviewed at this club, the Club Chairman, who is 55 years old, and the Junior Co-ordinator, who by day works in the ICT industry and is aged in his 40s. The role of a Junior Co-ordinator is to manage and organise the junior teams in the club. These interviews, as with Club 1, showed a distinction between an interviewee who worked in the ICT industry and was very 'technology savvy', and one that was not. Although the Club Chairman had been using email "since New Zealand acquired it", he only used it for work purposes. However the Junior Co-ordinator had evolved with the technology and was very familiar with the workings of the Internet, and how it could be used within Cricket clubs.

Email

The Junior Co-ordinator said he was not involved in the setup of email for the club, however he had been the main force behind the use of it throughout the club. He used it as a communication tool. One example is the cricket games he sends the junior cricketers to help them learn the rules of the sport. These games might be word games to learn the terms of cricket, or may suggest extra training that could be performed at home. Another use has email as the first point of call before other communications, for example to let people know if games are cancelled, and as a way of resolving problems he has as the Junior Co-ordinator. If someone has any club related problem, he asks them to send him an email; this would give him time to think about the issue, and respond in kind, rather than have to "think on his feet". The Club Chairman had started to use email as a communication tool, after the Junior Co-ordinator set up an email list for him to contact members. Both of the club representatives found out about using email through work, and saw it as a logical tool to use in Cricket administration. Although both used it at work, the Club Chairman found it difficult to use in the beginning, saying that for "older people like me, it was difficult to start with". The Junior Co-ordinator pushed for more use of email as a communication tool, saying that "many people are starting to use it, and when you use email, you have a record of the conversation". Although he was not directly involved with the decision to adopt (it was already being used), he was the person who championed it and made it more accepted, to the point where he would show people how to use it. An example is when he spent four hours with the Club Chairman and showed him how to use Microsoft Outlook (Microsoft's email application) and the Internet. Both of the representatives agreed that email "just sort of happened" within the club, firstly through their work, and gradually moving into Cricket. The club will continue to use it in the future, due to its ease of use. The Junior Co-ordinator suggested that "it's so easy" and the Club chairman agreed "that it's an easy way to communicate, and an easy way to get the message to several people at once."

Club Website

As with Club 1, this club did not have a club website. This was one of the clubs that did not return a survey. From the interview, they did indicate they wanted a website in the future, but had not taken any steps to implement one. Therefore this club was not yet in the Knowledge stage for this Internet Application.

Association or Third Party Website

The Junior Co-ordinator discussed National Website (NZ Online) and not the Association Website, however then he suggested that "no one uses the (NZ Online) website". The club used the website for promotion and not much more than that. They had "about three lines of text" to put contact details about the club. When it came to the potential of the website, he was "sold on the potential", adding that it would bring players to the club, market the club and provided an avenue for providing information. He said that it had not changed the way they did things after the website was implemented and that it still "needs to progress". Asked if it was difficult to understand, he said no, as he worked in the industry and understanding the technology was easy. The Junior Co-ordinator was not able to trial or see it in operation before it was implemented. The Junior Co-ordinator was born in South Africa, and moved a year or two before the implementation. He had been a driving force for the website to the point of questioning the decision to make the website optional, and not mandatory. However he was "sold on it", and will remain using it in the future.

Dealing with Game Statistics

Only the Club Chairman commented on this application. After attending a 'road show' that travelled nationwide to promote the NZ Online website, he found that "it was above my head", so he asked the

junior co-ordinator to examine the area of the website which handles game statistics. Once his club had set up the website, he intended to use it to keep track of player statistics. This innovation has not been implemented within the club yet. Moreover, because the club had not implemented it, he did not know whether they would use it in the future or not.

Research Framework and Results

This section summarises how Auckland Cricket Association has progressed along the Innovation-Decision process for each Internet Application.

In the section below, there are two discussion sections for each Internet application. The first section in each of the applications summarises the results of the survey. It also shows the stages of adoption from Rogers' Innovation-Decision process (2003), as well as the proportion of members in 'Administration' roles and 'Competition' roles. The second section in each application show the results of the interviews, and how the results have fitted into aspects of the framework. The questions are based on the stages of Rogers' Innovation-Decision Process, and shows how each aspect of the process either came via the Association or from within the club through an ICT champion. Each response to a question was classified as being a positive, or a negative, influence to adoption and for continued use.

The researcher has made the distinction between 'negative' and 'positive' with the following guidelines. If the interviewee had a pessimistic experience in one of the stages, even though it might have been a positive influence on adoption, the researcher classed this as a negative influence. According to the Rogers (2003) a Negative Incentive occurs as follows,

"Most incentives are positive in that they reward a desired behaviour change (such as adoption of a new idea), but it is also possible to penalise an individual by imposing an unwanted penalty or by withdrawing some desiderata (Latin for desired things) for not adopting an innovation." (Rogers, 2003, p. 237)

Another distinction that needs to be made is Organisational versus Individual influences. The definition that the researcher has used is who the influence has affected, the individual or the organisation.

Email

Seven of the clubs that were surveyed were in the Confirmation stage with email use. Generally the treasurer, the secretary and the committee were the most prolific users of email for administration use, followed by the president. Interestingly, coaches in all of the clubs use email, whereas it is used by the players at five of the seven responding clubs. Figure 14 shows the results of the survey.

Stages of Adoption					**Confirmation Stage**						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Email	100%	100%	100%	100%	57%	0%	71%	85%	85%	100%	57%

Figure 14 - I-D Mapping from the Surveys and who uses Email

Knowledge Stage

From the interviews that were conducted, there was one interviewee that found out about email through the association. This was through a presentation about why the association was using email. The other interviewees found out about email through individual means. These included work, and through using it in their personal life. Table 9 shows the breakdown of the positive observations made

by the interviewees that related to the Knowledge stage. Note that there were no negative comments relating to this stage for email use.

Table 9 - Themes from the Interviews on Email in the Knowledge Stage

Knowledge Stage	Positive	Negative
Organisation	- Found out about using email at a presentation that was hosted by the Team Development Manager at the ACA, that explained how to use it and why **- Secretary, Club 1**	
Individual	- Found out about using email at work, and not at Cricket - **Treasurer, Club 2** - Found out about using email through work **- Club Chairman and Junior Co-ordinator, Club 3** - "Everyone knows about it, it is a part of life, and the young members grew up with it (email)" **- Former Secretary, Club 1**	

Persuasion Stage

The eventual decision to adopt email at a local club level is made using the influences that are in the Persuasion Stage. As outlined in Chapter Five, this stage of Rogers' Innovation-Decision process (2003) is comprised of Relative Advantage, Compatibility, Complexity, Trialability, and Observability. From the interviews, there were no comments relating to Relative Advantage, or Compatibility of email. In regards to being influenced to adopt email, the clubs mentioned that many of these benefits occurred *after* adoption, so some of these factors would probably have been considered during the Persuasion stage. When asked about the Complexity of email, the Treasurer at Club 2 did not have any difficulty (as he works in the ICT industry), however the Secretary at Club 1 found it difficult in the beginning to use it, and only uses email for Cricket. The Club Chairman at Club 3 found it more challenging, particularly for the "older people like me". The Treasurer of Club 2 and the Former Secretary of Club 1 both said they had a chance to trial it at work. However, the Secretary of Club 1 had not used email before using it at the Cricket club. Table 10 shows the breakdown of the positive and negative observations made by the interviewees that related to the Persuasion stage. Although there are five perceived characteristics in the Persuasion stage, only the characteristics which are brought up during the interviews will be shown in the interview tables.

Table 10 - Themes from the Interviews on Email in the Persuasion Stage

Persuasion Stage	Positive	Negative
Complexity		
Individual	- Not very difficult to understand as he worked in the industry **- Treasurer, Club 2**	- Did find it difficult in the beginning to use it, and only uses email for Cricket **- Secretary, Club 1** - Found it difficult to use in the beginning, saying that with "older people like me, it was difficult to start with" **- Club Chairman, Club 3**
Trialability		
Individual	- Used it for work and personal use beforehand **- Treasurer, Club 2** - As he worked in the industry, it was not very difficult for him to learn email and he had a chance to try it out in the work place **- Former Secretary, Club 1**	- Did not have a chance to trial it or see it in operation beforehand **- Secretary, Club 1**
Observability		
Individual		- Did not have a chance to trial it or see it in operation beforehand **- Secretary, Club 1**

Decision Stage

The Secretary at Club 1 had the most to say about the decision to adopt email at his club. He knows that the secretary at his club is the person who communicates with the association, and therefore he decided to use email. At Club 3, email was already in use; however the Club Chairman remembers that it "just sort of happened". However the Junior Co-ordinator said that even though it had been introduced, he was the one that "championed it". The decision to adopt an innovation can be regarded as a moment in time when the local clubs choose to use email, unlike the other stages which can take months, or even years. This would explain why there are not many comments for the Decision stage. Table 11 shows the breakdown of the positive observations made by the interviewees that related to the Decision stage. Note that there were no negative comments relating to this stage for email use.

Table 11 - Themes from the Interviews on Email in the Decision Stage

Decision Stage	Positive	Negative
Organisation		
Individual	- "It just sort of happened" **- Club Chairman, Club 3** - I was the person who championed it **- Junior Co-ordinator, Club 3** - The Secretary is the most important role in the club, he is the person who communicates between a third party (the Association) and the Cricket club" **- Secretary, Club 1**	

Implementation Stage

The Secretary of Club 1 said that it was his duty to supply a list of email addresses for the captains of each team in his club. Even though these lists are revised every season, the innovation had already been implemented. The Junior Co-ordinator also added that he used email to send his junior side information about games to play at home to learn about Cricket, and develop their skills at home. For him, email became the first point of call before any other communication tool. On an individual level, the Treasurer of Club 2 mentioned that the club saw gains in the workplace, and as the "IT (guy", helped the process along. Table 12 shows the breakdown of the positive observations made by the interviewees that related to the Implementation stage. Note that there were no negative comments relating to this stage for email use.

Table 12 - Themes from the Interviews on Email in the Implementation Stage

Implementation Stage	Positive	Negative
Organisation	- "As the secretary, it is my duty to create an (email) address book for each team captain, this way I can email each team easily and quickly" **- Secretary, Club 1** - One example is the games he sends the junior Cricketers to help them learn the rules of the sport **- Junior Co-ordinator, Club 3** - Email is used as the first point of call before other communications **- Junior Co-ordinator, Club 3**	
Individual	- As the "IT guy", he helped the process along **- Treasurer, Club 2** - Started using email as a communication tool **- Club Chairman, Club 3** - Made it more accepted to the point he will show people how to use it **- Junior Co-ordinator, Club 3**	

Confirmation Stage

From the comments from the interviews pertaining to Confirmation, the general theme was that email was being used for its ease of use, ability to save time and to leave a 'paper trail' of communications. The Secretary at Club 1 commented about how email was becoming "the norm and not the exception"

when communicating. The Treasurer at Club 2 also added that email had "a paper trail that is traceable, and everything is in writing". The Club Chairman of Club 3 suggested that email also made it easy to communicate to several people at once. However, the Secretary of Club 1 said that email would not solve all of the communication problems, adding that if a player did not have email, you would still need to call them. The Former Secretary of Club 1 also added that due to the introduction of email, there had been a reduction in the amount of telephone calls and physical meetings. Table 13 shows the breakdown of the positive, and negative, observations made by the interviewees that related to the Confirmation stage.

Table 13 - Themes from the Interviews on Email in the Confirmation Stage

Confirmation Stage	Positive	Negative
Individual	- "Certainly, it is convenient and saves time" - **Former Secretary, Club 1** - "Very convenient, because beforehand you needed to call each person and if you do not get them, you needed to keep calling until you do" - **Secretary, Club 1** - "Using email is the norm and not the exception" - **Secretary, Club 1** - "Absolutely, ease of use" - **Secretary, Club 1** - The benefit they gain by using email is essentially ease of communication - **Treasurer, Club 2** - "Email is more efficient, and the communication (message) is getting through" - **Treasurer, Club 2** - "It is easy to communicate to people while leaving a paper trail, it is traceable, and everything is in writing" - **Treasurer, Club 2** - Both will continue to use it in the future, due to its ease of use - **Club Chairman and Junior Co-ordinator, Club 3** - "It's so easy" - **Junior Co-ordinator, Club 3** - "That its an easy way to communicate, and an easy way to get the message to several people at once." - **Club Chairman, Club 3** - The advantage of email is that it leaves a paper trail and often verbal messages get lost - **Treasurer, Club 2** - "Many people are starting to use it, and when you use email, you have a record of the conversation" - **Junior Co-ordinator, Club 3** - "Certainly, before we used the telephone and had physical meetings, now we have reduced that" - **Former Secretary, Club 1** - "We all saw gains in the workplace" - **Treasurer, Club 2**	- "If they (another player) did not have email (or they do not use it), you still need to ring them" - **Secretary, Club 1**

The Framework

This was the first time that interviews were analysed and positioned into the research framework. In this section, the comments are placed into the framework as themes.

The knowledge of using email within the Cricket clubs came from three different sources, through an association presentation, through previous personal email use, and by using it through work.

After interviewing the representatives of these clubs, the researcher found that they were either very ICT savvy, or were just 'finding their feet'. All of the clubs had gone through the five stages of the Innovation-Decision process. This is of little surprise, because Internet Communication can be quickly adopted within a club with little effort. It is not a major, nor expensive, system that the Association, or a governing body, needs to be in charge of. All of the stages of the Innovation-Decision Process had been reached by all of the responding clubs for email.

From the interviews, there are a number of comments relating to each of the stages. Table 14 summarises the findings from the interviews and how their statements fitted into the research framework. The results suggest that most of the comments about how email was adopted, were from an individual influence.

The research framework is divided into thirds with the top row showing the organisational influence on the Internet application, the middle row illustrates Rogers (2003) Innovation-Decision process stages, and the last row displays the individual influence on the Internet application. Each cell of the research framework represents the summarised theme from the interview. For example, if the knowledge for email was found through work, the word 'Work' will be printed in the individual knowledge cell. Adding to this, a symbol is included to show whether the summarised theme was a positive influence on adoption, (represented with a '+' in the cell), or negative (represented with a '^' in the cell). If there are two '+', for example, there were two instances of the same theme. This innovation will be discussed further in Chapter Ten – Discussion.

Table 14 shows the results influences that have affected the adoption of email in the Auckland Cricket Association. The results have shown that most of the influences come from the individual level. This was indicated by some of the interviewees championing the effects of this innovation. The results suggest the interviewees will continue to use email within their clubs, as it offers ease of use, convenience, and documents the electronic conversions. From the initial use of the framework, the researcher feels there might be some issues with how it is organised. The middle third (or Rogers row) will also be empty except for repeating what is in the organisational or individual comments in the Persuasion stage. This might be an area which will come under review for the revised framework.

Table 14 - Framework with the Auckland Results for Email

	Knowledge	**Persuasion**	**Decision**	**Implementation**	**Confirmation**
Organisational	-Association+			-Secretary implemented email lists+ -Junior Co-ordinator emails games+ -Becoming the norm+	
Rogers		Complexity Observability Trialability			
Individual	-Work++ -Personal+	Complexity+^^ Observability^ Trialability++^	-Unknown+ -Junior Co-ordinator championed it+ -Secretary Decided+	-Club Chairman+ -Helped process++	-Still had to call players if they did not have an email account^ -Convenient+++ -Norm+ -Ease of use++++++ -Paper trail++ -Reduced meetings+ -Gains in workplace +

Club Website

The results of the survey showed that all responding clubs were in the Confirmation stage for the Club Website, as shown in Figure 15. From an administrative viewpoint, a higher proportion of treasurers and committee members used the Club Website, followed by secretaries and the president. Interestingly all of the clubs surveyed had players that used the club website, as did coaches from five of the seven responding clubs. From the interviews, two of the clubs did not have a Club Website;

however, the surveys show that all of responding clubs had one. The reason for this was that only seven of the nine clubs returned the survey.

Stages of Adoption					Confirmation Stage						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
C W	100%	100%	100%	100%	71%	57%	85%	71%	85%	85%	100%

Figure 15 - I-D Mapping from the Surveys and who uses a Club Website

Knowledge Stage

The Treasurer at Club 2 found out about having a club website through a presentation that was hosted by New Zealand Cricket. The Secretary of Club 2 found out about having a Club Website through other clubs having a website. He added that "everybody knows about having a website". Table 15 shows the breakdown of the positive observations made by the interviewees that related to the Knowledge stage. Note that there were no negative comments relating to this stage for Club Website use.

Table 15 - Themes from the Interviews on Club Website in the Knowledge Stage

Knowledge Stage	Positive	Negative
Organisation	- New Zealand Cricket held a seminar to explain the idea and maintain that it was optional **- Treasurer, Club 2**	
Individual	- Knew about having a Cricket club website by other clubs having one, because, as he comments, "everybody knows about having a website" **- Secretary, Club 1**	

Persuasion Stage

The comments related to Relative Advantage suggested that the Junior Co-ordinator of Club 3 was "sold on it", and that it would bring players to the club, market the club, and provide an avenue for providing information to players. The Secretary of Club 1 said that his club did not have a website, however added that if they did, it "would have player records, history, events and news". Club 1 was in the Persuasion stage for this innovation. However, they were yet to make a decision on it. Club 2 already had a website, and they used it to store club history, player statistics and events. The Treasurer of Club 2 also mentioned that the Club Website was not *complex* to understand, adding that it was "very straightforward". He also mentioned that he had a chance to *trial* it before the season started. The Secretary of Club 1 had only *observed* the websites of other clubs. Table 16 shows the breakdown of the positive observations made by the interviewees that related to the Persuasion stage. Note that there were no negative comments relating to this stage for Club Website use.

Table 16 - Themes from the Interviews on Club Website in the Persuasion Stage

Persuasion Stage	Positive	Negative
Relative Advantage		
Individual	- When it comes to the potential of the website, he was "sold on it", adding that it will bring players to the club, market the club and provides an avenue for providing information **- Junior Co-ordinator, Club 3** - The club would use it for, if they had one, to record and store "player records, history, events and news" **- Secretary, Club 1**	
Compatibility		
Individual	- The club uses the website to keep club history, player statistics and events **- Treasurer, Club 2**	
Complexity		
Individual	- The website was very straight forward, however, this may be because he works in the ICT area **- Treasurer, Club 2**	
Trialability		
Organisation	- Had a chance to try it out for a couple of weeks before the season, prior to it being implemented (beta testing) **- Treasurer, Club 2**	
Observability		
Individual	- Reviewing websites by "jumping onto another Cricket club's website" **- Secretary, Club 1**	

Decision Stage

During the decision to adopt a Club Website, the Treasurer at Club 2 said that they had no choice in the matter, and was told from the association they had to have one. However this is the only club that said this. The NZ Online system referred to was an integrated website which housed match results, player statistics, and also had an option to develop a club website. From the other interviews, the researcher was told this was not a mandatory tool at this Cricket association. Club 1 had made a decision to adopt a Club Website. They were past the Decision stage, but not into the Implementation stage. Table 17 shows the breakdown of the positive, and negative, observations made by the interviewees that related to the Decision stage.

Table 17 - Themes from the Interviews on Club Website in the Decision Stage

Decision Stage	Positive	Negative
Organisation	- They want a website because everyone seems to have one **- Secretary, Club 1**	- "Told from above" (the association) to adopt **- Treasurer, Club 2**

Implementation Stage

Only one of the clubs is past the Decision stage, and into the Confirmation stage. The Treasurer of Club 2 wanted more functionality in the website. At the time, it was only text based, and did not provide the ability to add pictures. However the researcher believes that this functionality will come over time. Table 18 shows the breakdown of the positive observations made by the interviewees that related to the Implementation stage. Note that there were no negative comments relating to this stage for Club Website use.

Table 18 - Themes from the Interviews on Club Website in the Implementation Stage

Implementation Stage	Positive	Negative
Organisation		- It is still in its infancy, the Treasurer wants more freedom with the content for the club websites. At the moment, they are only text based and the administrator cannot insert pictures **- Treasurer, Club 2**

Confirmation Stage

As stated earlier, only Club 2 is past the Implementation stage of the Innovation-Decision process (Rogers, 2003). The Club will continue to use it into the future as "it is very central and there is more room for upgrades". Table 19 shows the breakdown of the positive observations made by the interviewees that related to the Confirmation stage. Note that there were no negative comments relating to this stage for Club Website use.

Table 19 - Themes from the Interviews on Club Website in the Confirmation Stage

Confirmation Stage	Positive	Negative
Individual	- Will continue to use it, because "it is very central and there is more room for upgrades" **- Treasurer, Club 2**	

The Framework

Only one of the clubs has an operational Club Website, and is thus in the Confirmation stage of the adoption model. The other two clubs are aware of it and both became aware of Cricket clubs having websites just through other clubs having them. Club 2 gained knowledge at a presentation hosted by Cricket New Zealand.

Club 1 looked into having a Club Website but had not gone past the Implementation stage. They knew about it, saw a need for one, and even trialled one out. They made a decision to adopt one, however only at a later time. Club 2 had gone through the Implementation and Confirmation stages, and were going to continue to use the Club Website. Club 3 are not using one. The two reasons why the other two clubs did not have a Club Website was due to not having enough time, and not having a dedicated ICT person to look after it. Both of them wanted one, but "had no time to set it up", whereas the club who had one, actually had appointed an ICT person from within the club.

The factors that affect the adoption of a club website seem to be quite a mix of organisational and individual. The framework shows another issue between the separation between the governing body (which is trying to have clubs adopt a website) and the Association (which does not have much control in this process). This might be looked at for the revised framework.

Table 20 is the research framework with the influences from the interviews entered into it.

Table 20 - Framework with the Auckland Results for Club Website

	Knowledge	Persuasion	Decision	Implementation	Confirmation
Organisational	-Association+	-Trialability	-Forced+^	-Limited Usability^	
Rogers		Relative Advantage Complexity Observability Trialability			
Individual	-Other Clubs+	-Relat Adv++ -Compat.+ -Complexity+ -Trialability + -Observability +			-Information is Central+

Association or Third Party Website

All clubs who returned a survey were in the Confirmation stage, as shown in Figure 16. The most prevalent users of this technology, of the clubs in the Confirmation stage, were split between the Presidents, Coaches and Players. This was followed by Secretaries and Committee Members.

Stages of Adoption					Confirmation Stage						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Assoc	100%	100%	100%	100%	71%	42%	0%	57%	57%	71%	71%

Figure 16 - I-D Mapping from the Surveys and who uses a Association Website

Knowledge Stage

All of the clubs interviewed were in the Confirmation stage of this Internet Application. The Former Secretary and the Current Secretary of Club 1 found out about the Association's Website from someone within the association. The Current Secretary also commented that he could instantly see the benefits of the website. The Treasurer at Club 2 found out about the website in much the same way as the NZ Online website, and that was through a seminar he attended. Table 21 shows the breakdown of the positive observations made by the interviewees that related to the Knowledge stage. Note that there were no negative comments relating to this stage for Association Website use.

Table 21 - Themes from the Interviews on Association Website in the Knowledge Stage

Knowledge Stage	Positive	Negative
Organisation	- Found out about the association website when a person from the association told them about it **- Former Secretary, Club 1** - The association told him about the website, and he sees the benefit as faster communication **- Secretary, Club 1** - Suggested that he found out about it in much the same way as the NZ Online website. He went to a seminar and was told about it **- Treasurer, Club 2**	

Persuasion Stage

From the interviews, there were a number of themes to emerge relating to the Persuasion stage. According to the interviewees, the *relative advantage* of this Internet application was to provide information in a faster manner to the clubs from the association. The Treasurer of Club 2 also added that one of the benefits was that match results (and presumably the ladders/standings) could be viewed online. The Current Secretary and Former Secretary both agreed that the association's website was a useful communication tool, and had replaced the need to call the association after the match to tell them the results, and also the need for communicating through letters and phone calls. None of the interviewees that commented on the *complexity* of the association's website had trouble using it. However, all of those who did comment positively did work in the ICT industry. As this is the Association's website, no one had a chance to *trial* it, nor *observe* it before it was implemented. Table 22 shows the breakdown of the positive, and negative, observations made by the interviewees that related to the Persuasion stage.

Table 22 - Themes from the Interviews on Association Website in the Persuasion Stage

Persuasion Stage	Positive	Negative
Relative Advantage		
Individual	- "Provides information on games, fixtures, update scores and they (the association) can send information" **- Former Secretary, Club 1** - The association told him about the website, and he sees many benefits of it as faster communication **- Secretary, Club 1** - Suggests that the benefits that it provides are that you can look at the statistics online (only games results, not player statistics), see the results of the other teams, lots of smaller clubs use it instead of building one (club website) themselves **- Treasurer, Club 2** - Before the website, the association had to mail out forms and make telephone calls **- Former Secretary, Club 1** - The website has changed the way he communicates to the association. Before it was through letters and telephone calls **- Secretary, Club 1**	
Complexity		
Individual	- Had little trouble understanding it **- Former Secretary, Club 1** - Did not find it difficult, as he works in the ICT industry **- Treasurer, Club 2** - Asked if it was difficult to understand, he said no, he works in the industry and understanding the technology was easy **- Junior Co-ordinator, Club 3**	
Trialability		
Individual	- Had a chance to try it before it was implemented **- Former Secretary, Club 1**	- Did not have a chance to try it out **- Secretary, Club 1**
Observability		
Individual		- He did not have a chance to try it out or see it in operation before it was in use **- Secretary, Club 1** - Able to see it in operation before it was implemented (this happened before he moved to the country) **- Junior Co-ordinator, Club 3**

Decision Stage

Only the Former Secretary commented on the decision to adopt the Association's Website, adding that he was forced to adopt the innovation. Table 23 shows the negative observation.

Table 23 - Themes from the Interviews on Association Website in the Decision Stage

Decision Stage	Positive	Negative
Organisation		- As the secretary at the time, he did not choose to adopt it, he had to **- Former Secretary, Club 1**

Implementation Stage

The interviewees suggested that there was no involvement from them in the implementation of the Association's website. The comments from the Former and Current Secretary of Club 1 included,

"there was no control over the website", and that there was no involvement in the setup of the association website, quoting that "it was done from above". These observations were confirmed by the Treasurer of Club 2, adding that "they did everything, and asked for suggestions later". He was not involved in the decision to implement it, this came from the Association. However once the Website had been implemented, the Secretary of Club 1 found it very straight forward, even though he was not technically minded. Table 24 shows the breakdown of the positive, and negative, observations made by the interviewees that related to the Implementation stage.

Table 24 - Themes from the Interviews on Association Website in the Implementation Stage

Implementation Stage	Positive	Negative
Organisation		- "There was no control over the website" - **Former Secretary, Club 1** - No involvement in the setup of the association website, quoting that "it was done from above" - **Secretary, Club 1** - It was "just implemented" - **Secretary, Club 1** - "No, they did everything, and asked for suggestions later" - **Treasurer, Club 2** - He was not involved in the decision to implement it, this came from the Association - **Treasurer, Club 2**
Individual	- Although not technically minded, he found the website very straight forward - **Secretary, Club 1**	

Confirmation Stage

Although this Internet application is controlled by the association, and its continued use by the association as a communication channel is out of the club's control, it was interesting to see how the clubs had formed an opinion about the innovation. The Former Secretary, and the Current Secretary, of Club 1 both agreed that it was an advance on the previous method of mailing out information, and liked having the information centralised. The Junior Co-ordinator of Club 3 said that he was "sold on it", and will remain using it into the future. The only negative comment about the innovation was the handling of the association's website by the association. The Former Secretary of Club 1 noted that it was implemented, and then only afterwards were the clubs asked for their opinions. Table 25 shows the breakdown of the positive and negative observations made by the interviewees that related to the Confirmation stage.

Table 25 - Themes from the Interviews on Association Website in the Confirmation Stage

Confirmation Stage	Positive	Negative
Organisation	- Before the website, the association had to mail out forms and make telephone calls - **Former Secretary, Club 1** - Definitely wants to keep using it, as the information is centralised - **Treasurer, Club 2**	- "It came from the association and the clubs made some suggestions later on" - **Former Secretary, Club 1**
Individual	- If he was offered a choice, he believes he would keep it, because it makes it "easy to communicate" - **Secretary, Club 1** - He is "sold on it", and will remain using it into the future - **Junior Co-ordinator, Club 3**	

The Framework

Table 26 provides a summary of the interviews and shows the comments related to each stage of the Innovation-Decision Process.

This Internet application seems to have been forced on clubs by the Association. Not all of the interviewees used the Association's Website, however someone from each club did use it. Two of the interviewees found out about the website through an Association presentation, and the other through word of mouth. Reasons for adoption related to *relative advantage*, *complexity*, *trialability* and *observability*. The interviewees commented that the *decision*, *implementation*, and the *confirmation* stage were controlled by the Association.

Table 26 - Framework with the Auckland Results for Association Website

	Knowledge	**Persuasion**	**Decision**	**Implementation**	**Confirmation**
Organisational	-Forced++		-Forced^	-Forced^^^^^	-Forced^ -Ease of Use+ -Central Info+
Rogers		Relative Advantage Complexity Trialability Observability			
Individual	-Word of Mouth	-Rel Adv+++++ -Complex+++ -Trialability+^ -Observ^^		-Ease of Use+	-Convenient+ -Ease of Use+

Online Statistics

The researcher believes that this innovation caused some confusion with the way the term "online statistics" was interpreted. This association has an area on their website for posting match results, and also the fixtures and competition ladders or standings are generated from that data. However when the researcher asked for the club's input on "online statistics" (through surveys), he was after information mainly about match results *and* player statistics. The researcher found that the interview results suggested a difference to the survey results, and believes that this has caused some confusion. The use of the Internet to deal with the Game Statistics has worked its way through most of the association, with all clubs surveyed in the Persuasion Stage, and 71% in the Confirmation Stage, as shown in Figure 17. The major user of the match results are Coaches and Players on 57% of the clubs in the Confirmation stage, followed by Presidents. This was of little surprise, as the players and coaches might be very interested in the results and player statistics of the matches.

Stages of Adoption					**Confirmation Stage**						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Stats	100%	100%	71%	71%	42%	28%	0	0	28%	57%	57%

Figure 17 - I-D Mapping from the Surveys and who uses Online Statistics

Knowledge Stage

The interviews were conducted with the notion that the online statistics were about the player's statistics, and using the Internet to process that data into meaningful information. None of the clubs interviewed were using an online statistical package to process their player's statistics. However there was a new website maintained by NZ Online that did this. It was still in the early stages of operation, and only one of the clubs knew about it. The Club Chairman of Club 3 found out about the innovation via a presentation by NZ Online. The current Secretary of Club 1 said that his club used a spreadsheet

to handle their player's statistics, however did want to upgrade to an online system. The problem for them was that they did not know what their options were. This club was in the Knowledge stage. They knew what they were after, however did not know the innovation existed. Table 27 shows the breakdown of the positive and negative observations made by the interviewees that related to the Knowledge stage.

Table 27 - Themes from the Interviews on Online Statistics in the Knowledge Stage

Knowledge Stage	Positive	Negative
Organisation	- Attending a road show that went nationwide to promote the NZ Online website - **Club Chairman, Club 3**	
Individual	- This system is much better and they want to move from an "ad-hoc spreadsheet system to an online web database" - **Current Secretary, Club 1**	

Persuasion Stage

The Persuasion stage of this innovation only involve one club. When the Club Chairman of Club 3 went to the road show he found the whole experience "above his head". This might be because he was not technically minded. The Treasurer at Club 2 saw the advantage of players always being "able to carry statistics with them if they leave a club or joins another association". This meant when a player moved to another club, or association, their record of statistics can be transferred to the new club, and along with it, their statistics. Table 28 shows the breakdown of the positive and negative observations made by the interviewees that related to the Persuasion stage.

Table 28 - Themes from the Interviews on Online Statistics in the Persuasion Stage

Persuasion Stage	Positive	Negative
Relative Advantage		
Individual	- "If a player leaves, and goes to another competition, all of their statistics go with them" - **Treasurer, Club 2**	
Complexity		
Individual		- Found that "it was above my head" - **Club Chairman, Club 3**
Trialability		
Individual		- He had a chance to trial it, but did not. This was because he did not understand it when he attended the road show - **Club Chairman, Club 3**

Decision Stage

No clubs were at this stage of the Innovation-Decision process with regard to Online Statistics. Thus, there were no observations made by the interviewees that related to the Decision stage.

Implementation Stage

As none of the clubs were at this level, the only comment for this stage was that the NZ Online system had not been Implemented at this club yet.

Confirmation Stage

There were no clubs at this stage. Thus, there were no observations made by the interviewees that related to the Confirmation stage.

The Framework

Club 1 wanted to move their 'amateurish spreadsheet' to an online database system. The second club had seen the tool in action, and were thinking about using it, therefore fit into the Persuasion stage.

Table 29 is a summary from the interviews, and summarises the comments about each stage of the Innovation-Decision Process. This association did not have an online record keeping system. The interview results suggested that the clubs were in the Knowledge stage of the process. This, like the association's website Internet applications, needed to be controlled at the association level, not the club level. This Internet application is a 'one in, all in' solution.

Table 29 - Framework with the Auckland Results for Online Statistics

	Knowledge	Persuasion	Decision	Implementation	Confirmation
Organisational	Association +				
Rogers		Complexity Trialability			
Individual	Want to move to an online system +	Complexity ^ Trialability ^			

Reflections for the Next Round of Interviews

After the first round of data collection, the researcher felt that he should arrange a meeting with the sporting Association before anything else. This meeting would be used to explain how to administer the surveys (if the researcher could not administer it himself), and to gain an appreciation of how the association runs its administration, and what they expect from the clubs. Embracing this method the researcher will not have to "work out" how the association's administration works through the interviewing the clubs.

7.3 Suitability of the Research Framework

Once the first round of data collection had been completed, the framework that was used as an instrument to see how these sporting clubs were adopting Internet applications was examined for its suitability and durability.

With this set of data collection complete, it was apparent to the researcher that the results did not comfortably fit into the first version of the framework. There was still an opportunity to further develop the framework.

Initially, the factors evident in Rogers' model had been linked with factors identified in the literature to produce the preliminary theoretical framework shown in Table 30. However, it was felt that Rogers' Innovation-Decision process did not explain all of the factors that lead to the adoption of these technologies. When the framework was constructed, it appeared that there were a number of other factors evident in the literature to explain the adoption of the Internet applications in local sporting clubs. These factors were taken from the literature relating to the adoption of ICTs in businesses, and CBOs. Similarly, there was little available literature targeting volunteer use of ICTs, so the impacts of ICTs on employees in businesses was be used for the initial version of the framework. Some extra factors were added in as part of the development of the framework, including, 'Type of Sport', 'Employee and Volunteer use of ICTs', and the 'Impacts of ICT on the Volunteers'.

It was anticipated that examination of these factors at organisational and individual levels would identify influences in both 'directions' related to the source of influences to adopt Internet technologies and tensions (especially with individuals) related to the use of the technologies. The

'directions' refer to the *downward* pressure from the association to the clubs (the institution) to adopt an Internet application, and the *upward* pressure from an individual within the club to have an Innovation adopted by the club, or association. Table 30 shows the initial framework that was developed before the first round of data collection.

Table 30 - Rogers' Model combined with the Initial Framework

	Research Aims				
	← Factors →			← What →	← Impact →
Rogers' Stage	**Knowledge**	**Persuasion**	**Decision**	**Implementation**	**Confirmation**
Organisation (Local Sporting Club)		-CBO/Small Business Use of ICT -Type of Sport	-Top Down Influences		-Impacts of ICTs
Rogers' Stage Model (Features/ Characteristics)	Awareness	-Relative advantage -Compatibility -Complexity -Trialability -Observability	-Accept -Reject	-Possible Tensions -Uncertainty?	- Reinforcement for decision -Dissonance -Discontinuance
Individual (Volunteer)		-Volunteer use of ICT	-Bottom up Influences -ICT Champion		-Employee use of ICT -Volunteer use of ICT

This framework had some inconsistencies. One of the biggest issues was that the framework did not show who influenced the decision to adopt the innovation. For example, email was generally adopted within a sporting club, as the entity that influenced the innovation's decision witnessed gains made in the work place or through their personal use of email. These influences were generally from the 'Individual' level. However, what about forced adoption? Using an online statistical program for example, to record scores and helping with administration can improve efficiencies. It is a system that could work extremely well if all clubs are using it. This is where the association needs to mandate its adoption compulsory, and force the clubs to use it. These two examples demonstrate the need to include into the framework 'who' is influencing each stage of the adoption process.

The last major influence that was not considered was the national/state governing body. If such bodies have spent time, and money on setting up a customised system, for example an online statistics program, the associations can see this as an easy (and usually free) way of implementing a expensive system that they alone would not have the scope to implement.

Overall the Rogers' Innovation-Decision process (2003) worked quite well as a basis for analysing the first round of data collection. Most of the indentified factors influencing the various stages of adoption were related to Rogers' model, rather than the other (literature) factors that were included in the framework. Some of these other factors were still evident, but fitted into the various Innovation-Decision stages.

Table 31 shows the new, simplified framework. This revised version combines the notion of 'who influenced the innovation', along with Rogers' (2003) process and other added factors.

Table 31 - Rogers' Model combined with the New Version of the Framework

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution					
Organisation					
Individual					
Other					

7.4 Stages of the New Version of the Research Framework

Table 31 demonstrates the new framework, altered as a result of the interviews. When compared with the previous framework it is much simplified.

From the findings it was apparent that the influence was not always the same entity throughout the stages of adoption. For example, knowledge for a club website can come from the individual. However, the decision to adopt the club website can be voted on by the committee, then implemented by the individual. The different entities that might influence adoption is now reflected in the research framework.

7.4.1 Knowledge

In regards to the knowledge section of the framework, 'Organisations' have been blocked out. This is due to the fact that knowledge will not be acquired from a Club/Committee (the Organisation), it is acquired from an individual from within the Club, externally, or from an 'Other' influence. The three roles a Club/Committee will play in this process are, when the decision to adopt an innovation can be made by the Club/Committee, it can be implemented by the club, and the assessment made on the innovation in the Confirmation stage. However, these stages can also be completed by the other change agents, like the Organisation and/or an Individual. The first change to the Knowledge stage is the factors that influence where the Knowledge was gained. In the Knowledge stage, the results have shown that only three entities that Knowledge can be gained from, these are from an institution, individual within the club, and/or 'other' influences.

The institution is either the association, sporting governing body, or government. The typical sources of knowledge (from the data collection) were;

- Seminars hosted by the association, sporting governing body, or the government,
- During delegate meetings, and
- Communications, such as email and phone calls.

Knowledge can also be gained from an individual within a club. From the data collection, this knowledge came from;

- Home/personal use of the innovation, which has been adapted for use at a sporting club, such as email or a club website,
- Work/Business use of the innovation, which has been adapted for use at a sporting club, such as email or a club website, and
- Awareness of the innovation by accident, such as a chance meeting between two club delegates at an Association delegate's meeting. This was included, as it might form a possible explanation of knowledge in the next round of data collection.

The last of the factors is 'other' influences. This is a category that is not addressed by the previous two. This knowledge can come from a number of communication channels such as,

- Third party operators (commercial providers of online services),
- Other institutions or clubs/committees in either the same, or another association, or even another type of sport, such as *NZ Online*, and
- Awareness of the innovation by accident, again this was included as it might form a possible explanation of gaining data in the next round of data collection.

7.4.2 Persuasion

The second change was to the Persuasion column. The Rogers' (2003) factors have still been included in this section (namely relative advantage, compatibility, complexity, trialability, and observability) but will be shown as needed against influence. The other factors that have been added to this sector are, if the institution influences the adoption. Some of the factors that have been omitted from the framework are the volunteer's use of ICT, and CBO/small business use of ICT, as the data suggested that these did not influence this stage of the model.

When an institution/association influences clubs, or even individuals, to adopt an innovation, the clubs, or individuals, usually must comply otherwise they could face fines or loss of championship points. One of the Internet applications that match this is the online statistics application. For an online statistical program to work properly, all of the clubs in an association need to be involved. The institution/association needs to lead this adoption, and not give the clubs any choice about adopting it or not. This is why this influence has been included for this stage, but also decision, implementation, and confirmation.

The last factor added in this section is the type of sport. This was included in the initial framework; however, it is now a sub section of relative advantage. As cricket is a complex scoring sport at even such a local level, Internet applications may be the perfect way of processing this data. However with other sports that are not as complex, such as hockey and soccer, using computers to process data may provide less of an advantage. Thus, for Cricket and similar sports, some Internet applications may provide a greater advantage *relative* to how they did things previously.

7.4.3 Decision

This section has been reduced to just have the possible outcomes of adopting the application, or rejecting it. Except for the 'other' influence, the rest of the influences can decide on adopting an Internet application.

Another omission that has been made to the framework for the decision stage, was the 'top-down' or 'bottom-up' influence. Once it became apparent that the influence to adopt was not always the same entity, this was removed as now it has been incorporated in all of the stages of adoption. For example, the knowledge for a club website may have come from the individual (bottom-up), however decided upon by the organisation (top-down). This demonstrates that the influence (in all stages) will either be 'top-down' or 'bottom-up'.

When a club, or committee, chooses to make a decision to adopt an Internet application, usually this is achieved in a number of ways. Generally the standard course of action is to hold a committee meeting and discuss the inherent uncertainly of the innovation, and then have a vote. With the data collected so far, the only Internet application that fits this type of decision is a club website.

When an individual decides to adopt an innovation, generally they do so without fully consulting with the club/committee, or the association. The Internet applications that these would include are,

- Email, such as seeing the gains in the work place and then sending emails to other members,
- Club Website, such as championing the ideas to build a club website as a member. This was included as it might form a possible explanation of gaining data in future rounds of data collection.
- Using the associations website, such as looking for information about fixtures or ladders (standings). Again, this was included as it might form a possible explanation of gaining data in future rounds of data collection.

7.4.4 Implementation

Until the implementation stage, the previous stages of the innovation-decision process have strictly been a mental exercise, as per Rogers (2003). Putting an Innovation into practice is quite a different prospect than thinking about it. This part of the framework has been modified to show only unforeseen events, and the uncertainty.

When an innovation is implemented, there may be unforeseen events that occur. These are not always 'bad' events, some might be 'good' events. An example of this is when statistics became available online in one club, resulting in increased informal discussion around the club about scores and individual player's results.

Rogers' (2003) explains that there is a certain degree of uncertainty about the implementation of an innovation. He remarks that *"...*uncertainly about the expected consequences of the innovation still exist for the typical individual at the implementation stage, even though the decision to adopt has been made previously." (Rogers, 2003, p. 179)

7.4.5 Confirmation

The last stage of the revised framework is the confirmation stage. This part of the framework will can be determined by all of the decision-making units. The notable inclusion of the club/committee is there, because as a group they revise their decision.

From the initial framework, characteristics of ICTs have been added. This area appeared during the interview phase of the data collection. These include both positive and negative reinforcements of the decision to implement. These are the characteristics that developed,

- Convenience,
- The norm (becoming the normal way of doing things,
- Ease of use,
- Paper trail (written conversions are documented) and
- Information is central (all the information is in one place to access).

7.4.6 Summary of the New Version of the Framework

After the first round of data collection was complete and analysed, it was apparent that the framework that was proposed did not fit the results. However, that was expected as it was an initial framework. The new version of the framework fits much better with the results of Auckland. Nevertheless, the real test of the framework will be how robust it is when compared with other Cricket associations, other countries, other areas, and other sports, namely Soccer, and Hockey.

7.5 Testing the New Research Framework with Auckland's Data

In this section of the chapter, the summarised interview themes will be 're-fitted' into the revised research framework. Each cell of the research framework represents the summarised theme from the interviews. For example, if the knowledge for email was found through work, the word 'Work' will be printed in the individual knowledge cell. As with the previous version of the framework, a symbol will the included to show whether the summarised theme was positive, represented with a '+' in the cell, or negative represented with a '^' in the cell. If there are two '+', for example, there are two instances of the same summarised theme.

7.5.1 Email

The first of the Internet applications, Email, has been positioned into the revised research framework. Table 32 is a summary from the interviews, and shows the comments in each stage of the Innovation-Decision Process.

Table 32 - New Framework with the Auckland Results for Email

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	**Persuasion**	**Decision**	**Implementation**	**Confirmation**
Institution	+ Found out from Association				
Organisation	[redacted]			+Secretary implemented email lists +Junior Co-ordinator emails games +Becoming the norm+	
Individual	++Found out from work +Found out from Personal use	+^^Complexity ^Observability ++^Trialability	+Junior Co-ordinator championed it +Secretary Decided	+Club Chairman ++Interviewee helped process	^Still had to call players if they did not have an email account +++Convenient +Norm ++++++Ease of use ++Paper trail +Reduced meetings +Gains in workplace
Other			+ Unknown		

7.5.2 Club Website

Table 33 provides a summary of the club website interviews, and shows which of the comments about each stage of the Innovation-Decision Process has an influence on which interviewee.

Table 33 - New Framework with the Auckland Results for a Club Website

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	+Found out from Association	+Trialability	+^Forced by Association	^Limited Usability	
Organisation					
Individual	+Found out from other Clubs	+Relat Adv ++Compat. +Complexity +Trialability +Observability			+Information is Central
Other					

7.5.3 Association Website

Table 34 is a summary of the association website interviews.

Table 34 - New Framework with the Auckland Results for an Association Website

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	++Found by Association		^Forced	^^^^^Forced by Association	^Forced by Association +Ease of Use +Central Info
Organisation					
Individual	+Word of Mouth	+++Rel Adv ++Compat +++Complex ^+Trialability ^^Observability		+Ease of Use (the Association Website)	
Other					

7.5.4 Online Statistics

Table 35 is a summary of the online statistics interviews.

Table 35 - New Framework with the Auckland Results for Online Statistics

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	+++Found out from Association				
Organisation					
Individual	+Want to move to an online system	^Complexity ^Trialability			
Other					

7.6 Summary

This chapter reported the first round of data collection, which was conducted in Auckland, New Zealand. This round of data collection illustrated that whilst the original research framework was not adequate enough to actually display how Auckland cricket clubs were adopting Internet applications.

After the interviews from the Auckland clubs, the researcher found that the interviewees were either very ICT savvy, or were just 'finding their feet'.

All of the clubs have gone through the five stages of the Innovation-Decision process for email. This is of little surprise, because email can be quickly adopted within a club. It is not a major, nor expensive, system. The factors that had influenced email adoption have mostly arisen at an individual level. This was shown in the framework with the interviewees championing the decision and implementation stages of the process. Email will be used continually within the Clubs investigated.

Only one of the interviewed clubs has an operational Club Website, and is thus in the Confirmation stage of the adoption model. The other two clubs were aware of it and both became aware of Cricket clubs having websites through other clubs having them. Club 2, which is the only club interviewed that did have a Club Website, went to a presentation hosted by Cricket New Zealand.

The Association Website seemed to be forced on the clubs by the Association. Not all of the interviewees used the Association's Website, however, someone from each club did use it. Unlike email, the factors that influenced the use of the Association's Website were at the organisational level. This was shown with the comments that the association had forced its adoption throughout the process.

This association did not have an online record keeping system. The interview results suggested that the clubs were in the Knowledge stage of the process. This, like the association's website, needed to be controlled at the association level, not the club level. This Internet application is a 'one in, all in' solution. This application should be better developed as time goes by.

The next chapter will analyse the second round of data collection, involving the other three cricket associations covered in this thesis.

8 Chapter Eight – Round Two of Data Collection within Cricket Clubs

8.1 Introduction

This chapter will focus on the revised framework and three other Cricket associations analysed in this thesis. The other three Cricket associations are an Australian metropolitan association, an Australian rural association and an English rural association.

8.2 North Metro Cricket Association

The North Metro Cricket Association is a Cricket association in Melbourne, Australia. It is one of 20 Melbourne metropolitan associations. This association is based in the Northern suburbs of Melbourne and has 30 clubs. There are 10 senior grades made up of eight teams per grade. As this was a large association it was expected that using the Internet as a tool would help this association run more efficiently.

8.2.1 Data Collection

After a brief meeting with the Association President, consent was given to gather data. The Association President was very keen for the researcher to collect data as the association viewed themselves as leaders in relation to Internet use in cricket associations within the state of Victoria. The surveys were administered at a pre-season Presidents meeting and a number of respondents provided their details for follow up interviews. The interviews were conducted during the 2008/09 season.

Surveys

The surveys were completed with the researcher being present, which gave him a greater control of the process. The return rate for the surveys was 80%, with six of the clubs (the remaining 20%) absent during the meeting. With such a large response rate, the idea of conducting the surveys during a meeting (having a captive audience!) worked very well. Although the Auckland survey yielded a return rate of 77%, the researcher felt that he was more in control with this association as the surveys were returned whilst he was present.

The results of the survey confirmed that the North Metro Cricket Association was very advanced with all of the Internet applications being at a late stage of adoption for the vast majority of clubs. Of the 24 surveys that were returned, there were 21 male and three female respondents. Each of the clubs had an average of four senior teams and also four junior teams. There were 15 Presidents at the meeting, which is of little surprise, seeing it was a Presidents' meeting. The next most prevalent in attendance were Secretaries (seven), then Committee Members (two). Four people held multiple positions. The average years of operation for the club's were almost 54 years, with the highest being 86 years and the lowest being 11 years .

Figure 18 provides a summary of the finding from the surveys. The left side of the figure portrays the proportions of clubs at different stages of the adoption in Rogers Innovation-Decision process for each application:

- Email ('Email' in Figure 18)
- Club Website ('CW')
- Association or Third Party Website ('Assoc')
- Online Statistics application ('Stats')

Respondents to the survey were also asked to describe who in the club actually used the applications on an ongoing basis. The right side of Figure 18 shows the proportion of members in 'Administration' roles (President ('Pres' in Figure 18); Vice President ('VP'); Treasurer ('TR'); Secretary ('Sec') and Committee Member ('Comm')) and 'Competition' roles (Coach or Player).

Stages of Adoption					Confirmation Stage						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Email	100%	100%	92%	92%	72%	45%	59%	81%	54%	40%	31%
C W	100%	100%	95%	95%	56%	34%	52%	73%	56%	39%	43%
Assoc	100%	100%	100%	100%	65%	30%	0%	69%	47%	30%	39%
Stats	100%	100%	95%	95%	43%	30%	43%	65%	43%	30%	47%

Figure 18 - I-D Mapping from the Surveys and who uses each Application

The results from the surveys are discussed below.

Email

The use of email in this Association was very advanced, with 100% of the subjects surveyed in the Persuasion stage and 92% in the Confirmation stage. Of the clubs in the Confirmation stage, all said they would continue to use email in the future. Of these clubs, Secretaries from 81% of clubs used email, followed by the Presidents (72%). On average, the clubs that had adopted email had used it for five and a half years, ranging from three clubs using email for the last ten years to a club only having used it for two years. The other two clubs that had not adopted email were planning to use it; the decision to use it was made by a President for one club and for the other club the decision was made by the Committee.

Club Website

There was a high level of Club Website adoption in this Association, with all clubs being at least in the Persuasion stages. The survey also showed that 95% of the clubs surveyed had adopted a website and moved to the Confirmation stage. All of the clubs in the Confirmation stage intended to use it into the future. Like the email innovation, the administration members were the largest users of Club Websites, compared to the competition category. The average time the clubs have had a website was 4.2 years, with the minimum being only six months and the maximum eight years. There was one club that had not adopted a club website, however they were planning to and this decision was made by the Committee.

Association or Third Party Website

The Association or Third Party Website had also been widely adopted, with 100% of all clubs surveyed adopting this innovation. The average time for using this Internet application was five years, similar to the Club Websites. The first user was ten years ago and the earliest was two years. All of the clubs in the Confirmation stage intended to use it into the future.

Online Statistics

The Online Statistics application had been widely adopted within this Association with 100% of the Association in the Persuasion stage and a 95% in the Confirmation stage. For the clubs that have adopted it, the most frequent users were Secretaries. An observation with these findings is that Secretaries were the most frequent users for all of the innovations. This might be due to the fact they handle more of the administration of the club and act as a representative for the association on behalf of the club. The average length of time clubs adopted the Online Statistics application had been little over five years, with the longest being ten years and the shortest being two years. This is exactly the same as the time periods for the Association's Website and when the clubs were compared on a club by club basis, 58% implemented the innovations at the same time. All of the clubs that were in the Confirmation stage intended to use it into the future. The only club that was not in the Adoption stage was planning to use it and this decision was made by the committee.

Summary of the Surveys

Like the Auckland Cricket Association, this association was quite advanced in the adoption process in all of the Internet applications examined. Secretaries in most of the clubs were the most prevalent users of all of the Internet application uses.

Figure 19 illustrates how long each of the clubs have been in the Confirmation stage with Electronic mail (email), Club Website (CW), an Association or Third Party system (Assoc) and Online Statistical program (Stats). Compared to the Auckland association, there are 17 more clubs in this association and the average number of years of adoption was almost five for all of the Internet applications. This figure was slightly down compared with the Auckland Association on 7.6 years. Nine clubs (30%) had adopted all of the Internet applications at the same time.

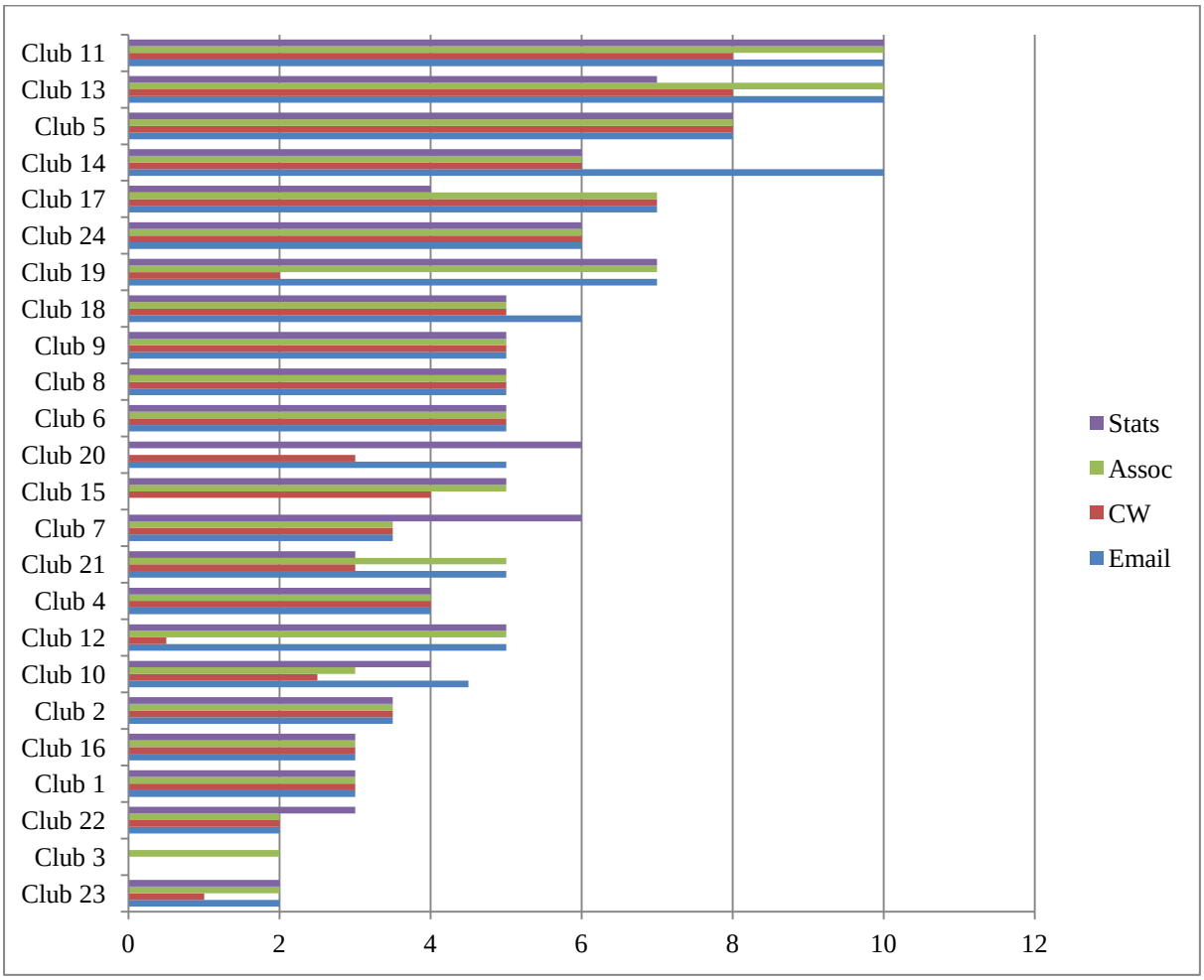


Figure 19 - The Amount of Years Each Club had used an Internet Application

Interviews

This phase of the data collection involved interviews with four club members from two of the 24 clubs. The interviewees were all members of the committee of their respected clubs and had an appointed position, such as Treasurer or Secretary. All of these interviews were conducted after the survey was administered.

Club 1

There were two members interviewed from this club, the Secretary and the President. The Secretary was an account manager, while the President was an administration officer. Both interviewees were in

professional positions and aged in their 50s. They were asked about how familiar they were with the list of 'typical' technology terms. As a reminder, these technology terms, such as 'the Internet', 'standard desktop applications' (like MS Office), 'blogs', 'networking' and 'gigabyte', were used to see how familiar the interviewees were with standard computer technology. The Secretary was "very" familiar with the terms; however, the President was "quite" familiar with them. This club used all of the Internet applications. During the interview, the President told the researcher that the Association had moved from Results Vault (which is a third party and pay-per-team arrangement), to the free Cricket Victoria system (Cricket Victoria is the state governing body) and then to the free Cricket Australia, or MyCricket, system (administered by the national governing body, Cricket Australia).

Email

According to both the Secretary and the President, this application was set up by the former President. The former President was the one who collected the email addresses and set up the mailing list. The new President did not have access to the club email account and therefore did not use it. He communicated with the committee via phone and had no input into the rest of the questions for this Internet application. The Secretary, on the other hand, administered the email system on behalf of the club and was the main contact person for the players from the club's Executive Committee. The Secretary used email for primary communication with the Association. For instance, the Association would send him an email and then he forwarded it on to the relevant people within the club. The Association used email to send out bulletins, fixtures changes, notifications of cancellations due to heat or rain and general administration. The Secretary found out about using email through work, as did the President, with both of them having professional jobs. In regards to the processes before using email, the Secretary commented that "I wasn't here before they used email, it's my second year. Until me, the former president handled it all". He went on to say that some of the benefits of email were "that it is quick and easy and the response to you is fast. The administration of games is handled quickly. However emailing the players on the other hand is a little more difficult when only about a third of the players have email". They have also set up an email registry and were starting to set up groups at the time of the interview. Email seemed to be an ideal platform to communicate between the association and clubs, however club to player communication was not as successful, as not *all* the players had email. This Internet application did not change the way the Secretary, or the President, performed their tasks, as they were already set up before they were in charge. Using email at the club was not difficult for the Secretary to understand. He only needed to be shown where the email account was and provided with login details. Both interviewees used email for work and had a chance to try it out and see it in use. The Secretary and the President were not involved with the decision to adopt, however, the Secretary believed there was improved use of email within the club's executive committee. "There is more communication and less delegates meetings. The previous President handled all of the club administration, now there was more communication (between the Executive Committee)". This club intended to use email into the future.

Club Website

For this Internet application, the President had more input than with the email application. Neither of them was involved in the set up of the initial website. This was again carried out by the former President. When the Association changed from Results Vault to the Cricket Victoria system, they were told they could have a free website. They "signed up to it", however no one updated it. Then the Association moved to the Cricket Victoria system, then to the MyCricket system. The President "hounded Cricket Australia for one (a club website) and they gave it to him". The President maintained the Club Website; however the Secretary called it a "work in progress". They used the website mainly to diffuse information to the club members. This included general news, team

selection, messages, match results and players' statistics. The President observed that only about 30% of the club members had an email account. Therefore, he did not knew how popular the website was until one week when he did not upload the teams. He said there were lots of complaints from the players that week about the website. The major benefit they found from having a website was that they had better access to the players and other club members. They used the website to diffuse information and were "geared towards electronic communication, rather than (paper) mail". The President remarked that the website allowed the sponsors to place advertisements and for the club to contact the club members. The only way the website had changed the way the club operates was that they no longer sent out paper mail to members. They publish information on the club website, including announcing the teams online. The Secretary had no difficulty with the website and mentioned that it was "quite straight forward". However, he did not maintain the website. The President had trouble adding pages and generating link buttons. Neither of them had a chance to try it out, as the website was already there. When the president was thinking about re-vamping the website he examined other cricket club websites on Results Vault, then other Cricket competitions and even local hockey websites to get some ideas. Neither of them was involved in the set up of the website. However, they both agreed that they would be keeping the website with the Secretary stating that "it is an excellent tool for communication and great for the juniors and members in their 20s". The President agreed that it was "a great tool and we have received good feedback from the players".

Association or Third Party Website

The Association website was accessed by both the Secretary and the President, neither of whom were involved in its set up (as this was completed by the Association). The Secretary used the website for news and rules (downloading handbooks, such as coaching manuals), however, the fixtures and competition ladders could be accessed via MyCricket. The Secretary used the website for viewing competition ladders and for communication with the Association. Both of the interviewees found out about the website before they were in their respective positions. Although neither of the interviewees was in the position of knowing what it was like before the Association website was adopted, both of them did express similar benefits that it provided. These included ease of accessing information and access to results and team ladders. Also for the Secretary, phone numbers of the members from the association and other club representatives were available. The Secretary did mention that they used to have a delegates meeting before every game (generally the Wednesday night before the game on Saturday), but now they have one meeting at the start of the season and probably would not have another one until the start of the finals. He believed that this was because of the website and the information that it provided. Neither of them had a chance to experience club operations before the website, however the Secretary's comment about the meetings suggests that it was previously a time consuming process. Both interviewees found the website to be very easy to use and neither of them had a chance to try it out or see it in operation before it went "live". The President had continued to use it, as it provided ease of access to information, whereas the Secretary said that it made "things more efficient".

Dealing with Game Statistics

This Association used the MyCricket system, which was produced by Cricket Australia, so neither of the representatives of the club was involved in the setup of the system. However, the Secretary did have to setup some logins for the President, Treasurer and the Team Captains. Both of them used the website for entering match results, player statistics, player eligibility, fixtures, ladders and general results. The President wanted to use it as a player database as well. The Secretary found out about the application from the association when they moved from Results Vault to MyCricket, whereas the President found out about it from the information sessions he had attended. The benefit that the

President cited was that it was less labour intensive. He used to calculate the match and player statistics manually and "loved" doing it at the time - now he would hate doing it manually since adopting MyCricket. The Secretary witnessed it from the other side, where all of the information was at his finger tips and on match days he entered the results in the clubrooms via a laptop and using mobile broadband. The system made a difference to the President's activities as he previously calculated the statistics by hand. He indicated that he was happier that it was carried out automatically. The Secretary said his job within the club had not changed because of the use of the online statistics. The President had no trouble understanding the online statistics package; he ended up teaching six or seven other people in the club how to use it. The Secretary, on the other hand, had some trouble, but was "getting there". Neither of them had a chance to trial the website, however the President did see it in operation at the information sessions. Neither of them were involved in the Decision to adopt MyCricket. That was the Association's decision. Both were happy with the new system. However, they did not have any choice as to whether they would keep using it.

Club 2

This interview was conducted mainly with the President, however the Club Website was discussed by the Secretary. The arrangement this club has, was that the President undertook all the adimistration work, and the Secretary managed the Club Website. The interview was conducted at their clubrooms after training. The President of this club had a professional job and was aged in his late 30s, whereas the Secretary was in his 40s and also held a professional job. The President and the Secretary were both quite familiar with the list of technology terms. This club used all of the Internet applications.

Email

The President was involved in the setup of email within this club, adding that "Cricket Victoria gave us an email account about 5-6 years ago". Just the President and the Vice-President from the club committee used it. They had it linked to their personal email accounts, so when an email was sent to the club email account, it was then forwarded to their personal accounts. The main reason they used email was for communication with the players. The President also added that "most of their players have email accounts, so outside of the Cricket club rooms it is an easy way to communicate." He found out about using email through work. The President had held a professional job for 25 years and "used email for 20 of those". The benefit the President expressed was that email was mostly for communication, "everyone has email". He also added that the Cricket Australia's online system (MyCricket) had an SMS function that allowed the club's administration to send out SMS messages to the members. The club used SMS to communicate information to members about functions, meetings and special messages, with the President adding that "SMS is better that email". This communication method had changed the way they communicated with their members. The President revealed that "they used to do it the old fashioned way, which was to phone people, it was expensive and hard to find people". Email was not hard for him to understand and use, "it's just like typing a letter". The President did have a chance to try it out and see it in operation beforehand through work. The club did not make the decision to adopt email, it was forced on them from the association and he adds that "the Association wants to move into the 21st century." The President said that they would continue to use email into the future, because "if you don't use it, you fall behind".

Club Website

For this part of the interview, the Secretary, who handles the website, decided to answer the questions. He was the person who administered the website and when it was established it was very basic. Now it had evolved and everyone used it, "the hit counter has gone from almost nothing to 5100 in a couple of years". The club's committee generally used the website to convey information to players. The

Club Website also had their player statistics online and a link to Cricket Australia's MyCricket, so players could look up ladders and current fixtures. There was a fantasy competition[5] function on the MyCricket website which they have implemented and this raised extra money for the club. This club found out about having a club website by looking at the top clubs who had websites and then chose to adopt one. They had a free website hosted by Cricket Victoria. They have placed all of their player statistics online. The Secretary went on to say that the benefits of the website were that they had player milestones "up there (on the website)" and messages for social functions – "it lets people know". The website was a marketing tool; the club had a "couple of people" join because of it. The club believed that they have become more professional and have used the website to give the club a "fresh look". When questioned about the ease of use, the Secretary replied that it was "not really hard, but it took a lot of time and patience. They put a lot of stuff on the website as a whole." The club did not have a chance to trial the website, "just used a lot of trial and error". However they did have a chance to see it in operation beforehand by looking "at the top club's websites and copying things off of them, then adding to it". The Secretary was the driving force behind the website. This club would continue to use this website into the future, adding that "it was a useful tool, it's now a talking point for the boys (lots of in jokes on it) and it gets the message out there".

Association or Third Party Website

This club was not involved in the setup of the Association's website; it was developed by the Association. The President added that "most of the committee and players use it and it gives information to clubs from the association. Before the website, there used to be a delegates meeting every week and you would have one guy asking dumb questions and you would be there til 10pm. Now we have meetings once a month". The President found out about the website through a delegates meeting and was told to check the website at least once a week for information from the Association to the clubs. The President said that the major benefit of the Association's website was that it reduces the frequency of delegate meetings. The website changed the way they performed tasks, as "there is a lot of information on the website and the club have used the website to develop policies which have been of great help". The President said the website was very easy for him to use. The website had been operational for about 10 years, so he did not have a chance to trial it, nor see it in operation before it was implemented. The President did say that the factors that led to the website adoption were out of his control, as the website "came from above". He would continue to use into the future, as "there is no turning back".

Dealing with Game Statistics

This Association used two different methods of handling game statistics. Firstly they used a company called ResultsTXT, in which the clubs SMS the details of the game to the association and then by 7 pm (about an hour after the scheduled finishing time of a game), an SMS would be returned to the clubs with the results of the other games played. This method had no bearing on ladders or match results, it was only used to inform other clubs of the results of the other games. Secondly, they used Cricket Australia's MyCricket system. The Association started using an online system called Results Vault in 2002/2003. This club was satisfied with the service that this company provided. Then the Association moved to the free State cricketing body's online statistics program in 2005/2006, but this club did not like it. They wanted to move back to Results Vault and were happy to pay for it. Then

[5] A fantasy competition is when the club runs a competition where each member in the club can create an imaginary team. Each player in the club is given a value (usually in a dollar figure) and the members create their own team which must fit under a predetermined 'salary cap'. A salary cap is the maximum amount each member is allowed to spend on their team. Each run, wicket, catch, etc. is given a point value and the fantasy team which accumulates the most points at the end of the season wins.

Cricket Australia released its MyCricket online statistics program and the club have been using it since 2008/2009. The President described it as "awesome". The Association made the clubs use it and they "love" the way it works. The club had been using it as a coaching tool and feel like "test cricketers" through the depth of the statistics and reports on hand. This club found out about this innovation through the Association and it changed the way they did things. They did not rely on a manual system for record keeping. The statistics were previously processed by hand and wasted many hours of a volunteer's time. Now the annual report had statistics and "makes it a bit of a year book". The President found it very easy and added "there was a bit of training, they set up terminals for us, but it's better if you just jump in". He saw it in operation during the training. The main factor that led to the adoption of this innovation was the Association wanted to adopt it and the clubs were made to use it, otherwise they were fined heavily. They would continue to use this system into the future as it was "much easier".

This phase of the data collection involved interviews with four club members from two of the 24 clubs. The interviewees were all members of the committee of their respected clubs and had an appointed position, such as Treasurer or Secretary. All of these interviews were conducted after the survey was administered.

8.2.2 Framework and Results

This section summarises how North Metro Cricket Association has progressed along the research framework adoption model for each Internet Application.

In the section below there are two sections for each Internet application. The first section for each of the applications summarises the results of the survey and shows the stages of adoption from Rogers' Innovation-Decision process (2003), as well as the proportion of members in 'administration' roles and 'competition' roles. The second section in each application shows the results of the interviews and how the results have fitted into various groups of the framework. The questions are based on the stages of Rogers' Innovation-Decision Process and show how each aspect of the process either came through the 'Organisational' influence or from an 'Individual'. Each response to a question is classified as being a positive or a negative influence to adoption and for continued use.

The researcher has made the distinction between 'negative' and 'positive' with the following guidelines. If the interviewee had a pessimistic experience in one of the stages, however it might have been a positive influence on adoption, the researcher classified this as negative influence. The researcher uses the theory of 'negative incentive' to address this issue. Negative incentives were discussed in Chapter 7 on page 91.

Email

The results of the survey indicated that this Association was advanced with the adoption of email. The survey showed that 22 of the responding 24 clubs were in the Confirmation stage, with all of the clubs wanting to continue using email in the future. The other two clubs were planning to use it and have decided upon it. In this Association, most of the email use was through the Secretaries, with 75% of the clubs in the Confirmation stage nominating them. This was next followed by the President (66%) and then the other Committee Members (57%). For the competition side, the 37% of the clubs in the Confirmation stage said Club Coaches used it, followed by 29% for the players. This figure was quite low compared to Auckland and might be explained by the use of SMS and the club website as the primary means of providing information to the Players. Also, both clubs mentioned that not all players had email accounts. Figure 20 shows the results of the survey.

Stages of Adoption					Confirmation Stage						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Email	100%	100%	92%	92%	66%	41%	54%	75%	57%	37%	29%

Figure 20 - I-D Mapping from the Surveys and who uses it for Email

Both of the clubs interviewed have moved through the five stages of the adoption process. Again, like the Auckland association, this was of little surprise as there was not a great deal of effort setting up an email account.

All of the interviewees that used email gained their knowledge of the innovation through its use at work.

The Persuasion stage of Rogers' Innovation-Decision process (2003) consists of *relative advantage*, *compatibility*, *complexity*, *trialability* and *observability*. A positive factor that could influence the adoption of email was that it was viewed being as a useful tool for communication, either from the Association to clubs, or between club committee members. There were no comments relating to *compatibility*. As far as the *complexity* of email, none of the interviewees had a problem with the level of difficulty that email presented. Some of the interviewees had used email at work, one for 20 years. The researcher has considered this to be a *trial* of the innovation. There were no comments relating to *observability*. Although email was adopted, the were a number of instances where the interviewees suggested SMS was a better alternative for communicating with players. The benefits of SMS which were mentioned included the ability to contact players directly on their mobile phones and the ease of being able to do this en masse.

In the Decision stage, none of the interviewees made the decision to adopt email. The President of Club 2 said the decision to adopt was made by the Association. This was through sending correspondence from the Association to the clubs. Two other interviewees said that the decision to adopt email was achieved before they were on the committee at their clubs. As email had been quite widespread for the previous 20 years, this was of little surprise. It seems that the decision to adopt email generally came from the Association; however, it will be interesting to see if this trend continues with the other associations.

As Rogers (2003) states, it is one thing to talk about the idea of an innovation; it is another to put it into practice. The process of implementing email had come from a variety of sources. The state governing body, Cricket Victoria, allocated an email account about five or six years earlier to a club. Club 1 was also influenced by an external entity to adopt, the Association, which started sending out information via email, so they had to acquire an email address for that purpose. Club 1 also implemented email to save money on mailouts to their members. However, once they had implemented email, the Secretary had trouble with "some of the little things" involved in the process. The interviewees generally did not have difficulty in implementing email. This came as little surprise as they all had professional jobs, and often worked with computers.

After the innovation had been implemented, adopters move through to the Confirmation stage to establish if email would continue to be used. All would continue to use email in the future. The Secretary of Club 1 said its "quick and easy", whereas the President of Club 2 would use it or "fall behind". The overall impression is that email will continued to be used to this association as a communication tool.

The Framework

From the interviews that were conducted and the surveys that were administered, this association was advanced when it comes to all stages of the adoption model. All of the interviewees used email and would continue to use it into the future.

The research framework is divided into four sections. The top section shows the 'Institutional' influences on the Internet application, the second section illustrates the 'Organisational' influence, the third section presents the 'Individual' influences and the bottom section displays the 'Other' influences. Each cell of the research framework represents the summarised theme from the interview. For example, if the Knowledge for email was found through work, the word 'Work' will be printed in the Individual Knowledge cell. Adding to this, a symbol will be included to show whether the summarised theme was a positive influence on adoption, (represented with a '+' in the cell), or negative influence on adoption (represented with a '^' in the cell). If there are two '+', for example, there were two instances of the same summarised theme.

Another distinction that needs to be made is 'Organisational' versus 'Individual' influences. The definition that the researcher has used is who the influence has affected. That is, whether the actions of the change agent had affected the individual, or the organisation.

From the interviews, there were a number of comments relating to each of the stages. Table 36 summarises the finding from the interviews and how their statements fitted into the research framework. The Knowledge stage of the revised research framework showed the Association gave information about email and the interviewees found out about it through work. The comments relating to *relative advantage* were about how game administration was handled quickly and the need for paper mail was almost nonexistent. However, the interviewees commented that SMS may be a better alternative to email, as more people have mobile phones compared to email accounts. The comment on *complexity* was about how email was "as easy as typing a letter". The comments on *trialability* related to how the interviewees used email at work, before using it at their Cricket clubs. One of the interviewees said the Association made the decision to adopt email, and two of the interviewees said they made the decision. The State Governing body setup an email account for Club 2. The interviewees found that email was a low cost alternative to paper mail; however, needed extra training once it was implemented. The comments from the Confirmation stage were about the ease and speed of use and how it was the new trend in technology, compared to conventional paper mail. This innovation will be discussed further in Chapter Ten – Discussion.

Table 36 - Revised Framework with the North Metro Results for Email

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution			^Association made decision to accept	+Cricket Victoria Supplied Email +Association send out Correspondents	
Organisation				+Secretary Setup Register	
Individual	+++Found out via Work	+++^^^Relative Advantage +Complexity ++Trialability	++Individuals made decision to accept	+Low Cost ^Extra Training Needed +Easy to Implement +Used as Primary Communication Tool	+Good to use +Quick to use +Easy to use +New Trend with technology
Other					

Club Website

The survey results found that overall, 23 of the 24 responding clubs had a Club Website and would continue to use it into the future. This innovation was used by less people than email as a communication tool. As with email, the Secretaries (70%) of the clubs were the main users. Figure 21 shows the results of the survey.

Stages of Adoption					Confirmation Stage						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
C W	100%	100%	95.8%	95.8%	54%	33%	50%	70%	54%	37%	41%

Figure 21 - I-D Mapping from the Surveys and who uses it for Club Website Application

The two interviewees at Club 1 gained knowledge about Cricket club websites through the Association. This came about when the Association changed the online record keeping systems and increasing functionally for the clubs. The Secretary of Club 2 found out about Club Websites through looking at an elite club's website and from other clubs in the Association. The Association was the entity that predominately provided the information to the clubs.

There are many elements that make up the Persuasion stage and depending on the decision-making unit, some are more important than others. For the Club Website, the two interviewees from Club 1 indicated that the *relative advantage* of having one included building value for the sponsors and having a communication platform for younger members to access information. The Secretary of Club 1 reinforced the latter point with "they rely on the website to give players information". The Secretary of Club 2 used the website to give their members information about upcoming social functions and player milestones. With the *observability* of the Club Website, the President of Club 1 did go to other clubs and even other sports, in an effort to gain ideas for the revamp of their current website. The Secretary of Club 2 viewed websites of other clubs. Both of the clubs formed positive opinions about having a club website. The main reasons for the adoption was improved communication to younger members at their clubs and as a central location to store this information.

Amongst all of the participating clubs, no interviewee had any involvement in the decision to adopt the Club Website. This decision was made before the interviewees were at their current positions. Thus, there were no observations made by the interviewees that related to the Decision stage.

Implementing a new system is often plagued by uncertainly; these beliefs have been echoed with some of the comments from the interviewees. The Secretary of Club 2 said that Cricket Victoria offered the club a free website and used it to create a "fresh look" for the club. However, some problems did occur. The issues related to the difficulty of the setting up the website. The President of Club 1 had trouble with some of the basic principles of website building, like adding pages and creating links. Other problems that arose included finding a willing participant from within the club to update the content. The Secretary of Club 1 said that there was no flexibility in the design of the website as it was based on a set template, therefore he added it was not difficult to implement, but frustrating. The Secretary of Club 2 found it very time consuming and needed a lot of patience.

After the innovation had been implemented, a process of confirmation determines if the innovation stays or was discontinued. Most of the comments related to a positive reaction to the Club Website. They generally included some sort of either formal or informal feedback mechanism; these included player reactions when items were not posted online, hit counters and even smoother administration of teams. The Secretaries of both teams talked about how it was such a useful tool for communication, good for the professional image of the club and for the sponsors. However, all of this communication exchange was not possible unless the playing group accessed the website. The Secretary of Club 1 indicated this as a negative influence.

The Framework

Table 37 is the research framework with the influences from the interviews entered into it. The clubs found out about club websites through Cricket Victoria, MyCricket introducing it as a new feature and from other clubs. The comments relating to *relative advantage* were about how the Club Website could be used for information diffusion. The comments regarding *Observability* were about how the website developers observed websites from other Cricket clubs and even other sports. The state governing body, Cricket Victoria, supplied a free website for Club 1. The Secretary of Club 2 found that the website was used for a club image revamp. However, the interviewees at Club 2 needed more training and also needed a webmaster to administer it into the future. The comments in the Confirmation stage were how formal and informal measures demonstrated the importance of the website. These measures included feedback from players, increased web traffic. All clubs would continue to use the Club Website Internet application into the future.

Table 37 - Revised Framework with the North Metro Results for Club Website

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	+Found out via Cricket Victoria +New website function			+Cricket Victoria Supplied Free Website ^No Flexibility (Template)	
Organisation		++++Relative Advantage			+++Player Feedback +++Website Traffic ^Players must use it
Individual	+Looked at other clubs	++^Complexity ^^Trialability +++Observability		+Club Revamp +Secretary drove Implementation ^^Extra Training Needed ^Need a Webmaster ++No More Paper Mail ++Easy to use and Understand ^Implemented Understood by Trial and Error	++Communication +Marketing
Other					

Association or Third Party Website

All of the clubs surveyed used the Association's Website and intended to use it into the future. As mentioned earlier in this chapter, this figure had to be recalculated because one survey was returned that had not been filled out correctly and it was removed from the data. With the previous innovations, the Secretaries were the most prevalent users, with 66% of the clubs nominating that their Secretaries used it. This was of little surprise, as the Secretary was the point of contact with the Association and might explain why no Treasurers used the website. Figure 22 shows the results of the survey.

Stages of Adoption					Confirmation Stage						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Assoc	100%	100%	100%	100%	62%	29%	0%	66%	45%	29%	37%

Figure 22 - I-D Mapping from the Surveys and who uses it for Association website

The knowledge about the Association's Website generally came from the Association. This was either from delegates' meetings, or as the Secretary of Club 1 suggested, "the information just filters through from the Association". All of the influences were from the 'organisational' area, which was of little surprise as it was a tool championed by the Association.

A problem with this stage (persuasion) was that the Association's Website was implemented before this group of interviewees took their respective administration roles at their clubs. However, the comments regarding *relative advantage* indicated that the Association's Website had lessened the

number of delegate's meeting. As far as *compatibility*, the Secretary of Club 1 commented that he was not around to experience his position before the website, so could not comment on that. There were no observations made by the interviewees that related to the Persuasion stage.

The interviewees suggested that the Association made the decision to adopt the website. Some of the comments related to this were the President of Club 2 said "we had no control over that (decision to Implement), it was made by the Association". He also added that "the Association website came from the top". This was a case of forced adoption. The association implemented the website, and the clubs were forced to use it.

As the website had been around for about 10 years, none of the interviewees were in their current positions during its implementation. However, the President of the Club 1 did say that the Association just "implemented it" before the start of the season. None of the interviewees had trouble with using the website. The Secretary of Club 1 said "all (of) the results are there. The club delegates have identified many benefits of using the Association's website, these included ease of use, and having the results posted online.

All of the interviewees have confirmed they will continue to use the Association website. However, whether the Association website would be there or not, was not the club's decision. The clubs have identified the advantages to having an Association website. Firstly, the amount of delegates' meetings have fallen significantly from one ever week during the season, to about four or five a season. The Secretary of Club 1 said it was "relatively easy (to use)" and "it's much more efficient and user friendly", adding to this, the President of Club 2 said "it was very straight forward". The President of Club 1 expressed how it was "easier (to) access to information, (and) phone numbers (of the association and other clubs)". The overall impression of the Association's website is that it has been successful for distributing information.

The Framework

Table 38 shows the research framework with the summary of the interviewees comments. Both interviewed clubs indicated that the Association provided information about its website. There were no comments in the Persuasion stage. The Association made the Decision to adopt the website. The Association setup the Association's website, and the interviewees found the website easy to use and observed that there was "no turning back now". The comments in the Confirmation stage stated that the interviewees found there were less delegates meetings, and more information was accessible through the association website.

Table 38 - Revised Framework with the North Metro Results for Association Website

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	+++Found out via Association		^^^Association made Decision	^Association Implemented it	++Less Delegate Meetings
Organisation					
Individual				+++No difficulty in Using the Website +Results were Posted Online	+++Better Communication ++++Ease of Use ++Access to Information +No Turning Back on the Technology +Used it to Develop Policies
Other					

Dealing with Game Statistics

Out of the clubs that returned a survey, 23 out of the 24 clubs were in the Confirmation stage and have indicated they would continue the Online Statistics application in the future. All of the clubs surveyed have at least moved to the persuasion stage and again the Secretary seemed to be the biggest users of the innovation. Figure 23 shows the results of the survey.

Stages of Adoption					Confirmation Stage						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Stats	100%	100%	95.8%	95.8%	41%	29%	41%	62%	41%	29%	45%

Figure 23 - I-D Mapping from the Surveys and who uses it for Online Statistics

All of the clubs gained knowledge about the Online Statistical package innovation through the Association. The Association held a presentation and invited all of the clubs to attend. This was where the clubs found out about the innovation.

In the Persuasion Stage, the clubs found that the *relative advantage* of the Online Statistical package wide ranging. The Secretary of Club 1 also said that "having the freedom of the player's information and statistics on demand was great". Training for the applications use was supplied to the clubs before the season started. The Secretary and President of Club 1 said they learnt the basics of the system at training, whereas the President of Club 2 said it was "better to learn yourself". The Secretary of Club 1 did not *observe* it before it was implemented. Generally, the clubs saw the potential of the application, and found methods of how it could be exploited, such as for coaching purposes. However, even if they formed an unfavourable opinion, the Association still implemented it.

The decision to adopt this Internet application was made by the Association. The President of Club 2 pointed out that clubs would be "fined by the Association very heavily" if they did not use the system. Thus, this adoption occurred via an "authority-decision type" decision (Rogers, 2003, p. 28).

Once the system was implemented, the Secretary of Club 1 said "Generally speaking I'm OK using the system". The researcher had used the system and how found it quite intensive and could see the need for a training program. The Secretary of Club 2 indicated there was a Fantasy League function of the software that the club used to generate more revenue. The online record keeping system was built by the national governing body, and implemented by the association.

Of the interviewees, all of them would continue to use this Online Statistics program into the future as an action by the Association. However, all of the interviewees *were* happy with the online system. The President and Secretary of Club 1 liked the way the statistics were processed automatically by computers, instead of being a manual task. The interviewees could see the benefits of the system with the President of Club 1 adding to this "it's less labour intensive (with the computers processing the data), I used to do the statistics by hand before the Internet". The Secretary of Club 1 added that being able to enter the match scores and player statistics at the clubs rooms straight after the game was a really "positive thing". The President of Club 2 added that he "loved having the stats online...much easier".

The Framework

Table 39 is the research framework with the influences from the interviews entered into it. The club interviewees indicated that they found out about the innovation through the Association. The comments relating to *relative advantage* were about how this Internet application could be used as a coaching tool with all of the statistics "at your fingertips" (or accessible online). The comments regarding *trialability* suggested that two of the interviewees did not have a chance to trial the Online Statistics package; however, one interviewee did at the preseason training course. The comments concerning *observability* suggested that one interview observed it and another did not. The Association made the Decision to adopt for three comments and an interviewee made the other comment. And the interviewee found the Online Statistical package easy to use, however needed some training in the beginning. The comments in the Confirmation stage were about the less statistical processing, having the statistics online and ease of information.

Table 39 - Revised Framework with the North Metro Results for Online Statistics

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	+++Found out via Association		^^^Assoc made Decision		
Organisation	[redacted]			+Generated Another Revenue Stream with Fantasy Competition +Building Value for Yearbook	+Less Statistic Processing
Individual		++Relative Advantage +^^Trialability +^Observability		++^Ease of Use ^Training others to use ^Organising logins of other +Unchanged Club Administration +Automated Processing of Statistics	+++Less Statistic Processing +++Statistics Online ++Ease of Use +Ease of Access
Other					

8.2.3 Reflections for the Next Round of Interviews

Having the Association in the home city of the researcher made contacting and interacting with the Association much easier. They were very keen to show off how advanced they thought they were and in the end this was proven to be correct. The next section will investigate the Colac Cricket Association.

8.3 Colac Cricket Association

The Colac Cricket Association is based in the rural area of Victoria (approximately two hours drive from Melbourne) and an hour from the biggest outer urban centre of Victoria, Geelong. This association has three senior grades and two junior grades. Overall there are 17 clubs that compete in this Association and there are 34 teams.

8.3.1 Data Collection

The initial impression of this Association was that they were limited in their use of the Internet and had a lack of expertise at the Association level to adopt it successfully. The general opinion of the interviewees was that the Association was "a little behind" in the implementation of the Internet.

Surveys

This was the second time that the survey was administered at an Association delegate's meeting. The researcher had a chance to administrator it personally and was able to answer questions from the Association and Club delegates on the night.

The return rate was 100%. This was again a successful result and further validation to the decision to administrator the survey at a delegate's meeting. The general age of the clubs was about 75 years, with the oldest a little over 150 years and the newest only 20 years of age. On average, each club had two senior teams and two junior teams. All of the 17 Club Delegates surveyed were male. There was a wide range of Administrative positions represented at this meeting with five Secretaries, four Committee Members and four Coaches, three Presidents, two Players and one Vice President.

Figure 24 offers a summary of the findings from the surveys.

Stages of Adoption					**Confirmation Stage**						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Email	94%	88%	70%	58%	33%	25%	8%	66%	8%	25%	25%
C W	94%	64%	29%	29%	20%	20%	20%	100%	20%	40%	40%
Assoc	64%	47%	17%	17%	0%	0%	0%	100%	0%	0%	0%
Stats	88%	64%	17%	17%	0%	0%	33%	33%	0%	0%	33%

Figure 24 - I-D Mapping from the Surveys and who uses each Application

The results from the surveys are discussed further below.

Email

Out of the 17 Clubs surveyed, there were 12 that used email. Of those five non-adopting clubs, three of them were planning to use it and this decision was made by the President on each occasion. Of the other two clubs not planning to use it, one had heard of using email as a communication tool for cricket Clubs and the other club had not. Out of all of the data collection so far, this was the only club that had not heard of using email as a communication tool for a cricket club. Of the 12 clubs that used email, the delegates who were nominated that mainly used the innovation were Secretaries (on 8 occasions), Presidents (4) and Vice-Presidents (3), Players (3) and Coaches (3). The average amount of time the Internet communication application had been used for was 3.1 years, with the longest being five years and the shortest only one year. Ten of those 12 clubs were going be to using it in the future and the other two clubs did not answer that question.

Club Website

Out of the 17 clubs that were surveyed, only five clubs had websites. As there were a number of clubs that had not adopted a website, the researcher felt it was important to further examine the results of the survey.

Clubs with a Website

Of the five clubs that did have a website, the people who were nominated by the club who used the website were Secretaries (on 5 occasions), Players (2) and Coaches (2). The average amount of time the clubs have had a Club Website was 2.6 years, similar to email use on 3.1 years. The longest use of the Club Website was four years and the shortest was one year. All of the five clubs that had a website would continue to use it into the future.

Clubs without a Website

Of the clubs that did not have a website, six were planning to build one, and four clubs that were not planning to build a website. Two of the club delegates surveyed had heard of using a club website, one had not and one did not answer.

Association or Third Party Website

This question may have been a fraction harder to answer for most of these clubs than first thought. This Association did not have its own website and therefore the only clubs that used a third party website did so because they decided to do it themselves. The reason for the clubs using this application is explained in the interview section. Of the 17 clubs, there were three clubs that have used a third party website and 14 that did not. Of those 14, five were planning to and seven were not (two surveys were unusable). Of those five clubs that were planning to use a third party website, the decision was made by the Secretary (on three occasions), and the President (2). Of the seven clubs that were not planning to use it, six of them have not even heard about Cricket Associations having a website, with one club not answering. Of the three clubs that have used a third party website, all of them have said that only the Secretaries of the club used it. The average length of use was just over three years, with the longest being four years and the shortest three years. All of the three clubs said they were going to continue to use it into the future.

Dealing with Game Statistics

This Internet application showed more clubs in the Knowledge stage than the Association or Third Party Website (88% to 64% respectively), however there were the same amount of clubs that used Online Statistics. Only one of the three clubs that used a Third Party website used Online Statistics as well. So, out of the 17 clubs, three used Online Statistics and 14 did not.

Clubs which used Online Statistics

Of the three clubs that were using Online Statistics, the clubs nominated the Secretaries, the Treasurers and the Players as the users. The average length of time for use was two years and eight months, with the longest being four years and the shortest only one year. All of the three clubs would use online statistics into the future.

Clubs which did not use Online Statistics

There were 14 clubs that did not use Online Statistics. Of those 14, eight of them were planning to use it, with the Secretary making that decision on five occasions, followed by Presidents (2) and Committee Members (2). Therefore, four clubs were not planning to use online statistics (two clubs did not answer the question). Two of them had heard about the notion (knowledge stage) and two have not (before knowledge).

Summary of the Surveys

Compared to the previous two associations, this Association was not as advanced in its adoption of this Internet application. There was only one club that had implemented all four of the Internet applications and they implemented them all in the same year. The average number of years these clubs have adopted all of these application was 3.1 years. This was less than the North Metro Association (4.9 years) and the Auckland Association (on 7.2 years). There were seven clubs that had not reached the Confirmation in any of the applications and only seven clubs that had reached the Confirmation stage in either one or two of the Internet applications. Figure 25 shows how long each of the clubs had adopted each of the Internet Applications.

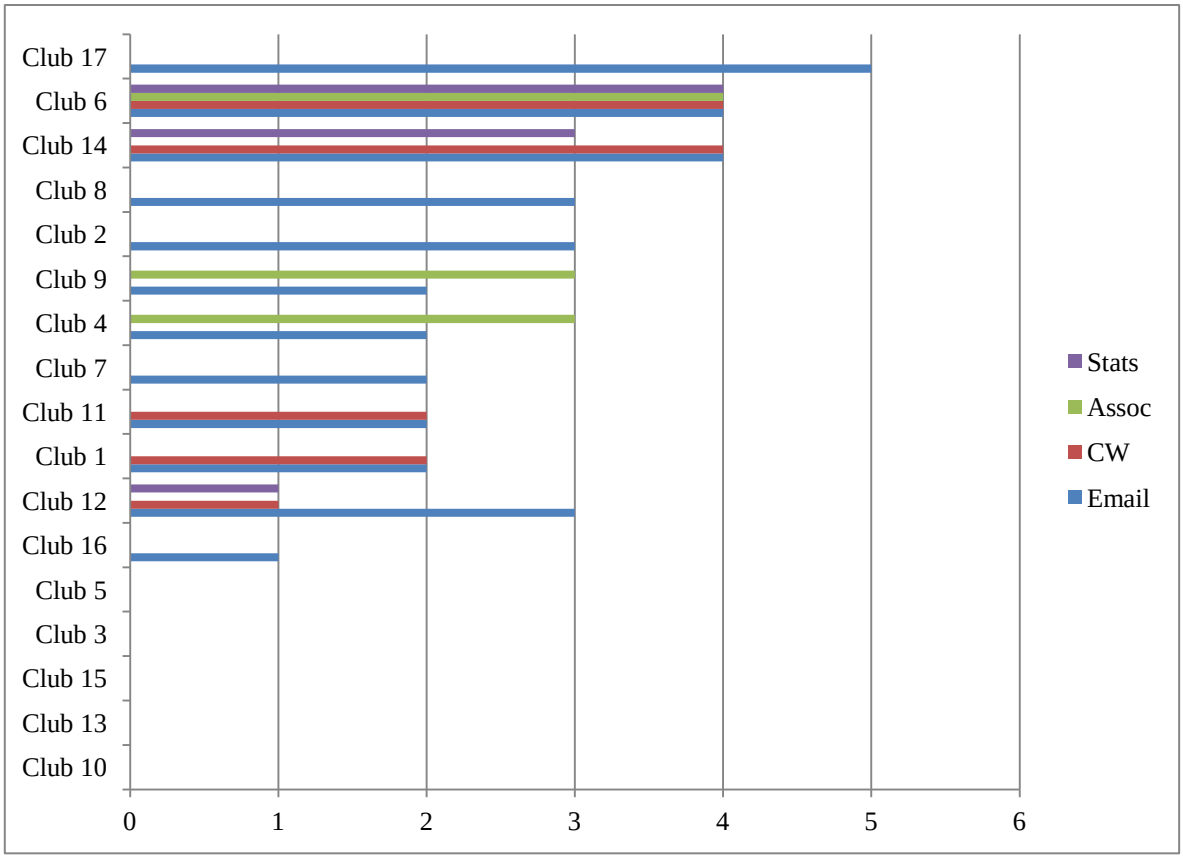


Figure 25 - The Amount of Years Each Club has used an Internet Application

Interviews

The researcher interviewed a representative from three different clubs. The interview and the survey results did reflex the relatively slow rate of adoption and diffusion of the Internet throughout this Association. Overall, this Association had not used the Internet and its applications, to the fullest potential as it will be shown later.

Club 1

This club had only two teams. The researcher interviewed the club Secretary who was a tradesman and in his mid 40s. He was fairly familiar with the technology terms. However, this club only used two of the four Internet technologies, Email and a Third Party website.

Email

The Secretary was involved in the setup of email within this club. He had a dedicated email address for the club and used email to receive messages from the VCA[6] and to communicate directly with the Association's Secretary. When asked about how he found out about using email at cricket clubs, he was not sure and said that they "just received stuff from Cricket Victoria and the Association". He said that using email was much "quicker and faster" than using paper mail. The Secretary also added that "last season everything was done via paper mail and this year, it is all email". The researcher later found out through subsequent interviews that this was because of a new Association Secretary (a change within the Association). This application had changed the way he preformed his administration activities. The Secretary found it a bit difficult to use and understand email in the beginning and "still finds it a bit frustrating at times". He had used email in the past; however, this was generally through work use. The Secretary was not involved in the decision to adopt email, however he would continue to use it in the future, as it was "a lot easier".

Club Website

This club did not have a Club Website as it was only a small club that did not see the need for one. The Secretary stated that "we are a small club and didn't need to communicate to our members that way".

Association or Third Party Website

This Internet application was not used to its fullest potential with the Association not implementing a website. The Secretary used Cricket Australia's Internet application, MyCricket. However, the club only used one aspect of it – registration for inexpensive player liability insurance. As part of an agreement with Cricket Australia and an Insurance company, there was a program which cricket clubs could participate in which offered inexpensive player insurance. However, clubs must be registered on MyCricket. He commented that the new Association Secretary wanted to fully employ the system. He said that "a couple of the clubs used the system to put their player statistics and match results online, but they gave up". The reason they gave up was that they had no support from the Association, and, in the longer run, needed the assistance of the Association to co-ordinate the fixtures and provide the approval for the official results of games. The Secretary used this innovation as a secure online player database (to store player's addresses, phone numbers, email address and so forth) and to register for the cheaper player liability insurance. He found out about using the MyCricket website through a Cricket Victoria road show. So far, this application had not provided much benefit to him and his Cricket club, as it was only used for insurance purposes. Because it was only used for this function, it had not changed the way he conducted the administration of the club, nor was it difficult for him to understand and use. In a sense he had tried this application out, only because he was using it for something it was not truly designed for. He did not have a chance to see it in operation before it was being used. From a club perspective, he was the one that implemented it. The Secretary would continue to use it in the future, however wanted the Association to deploy the system further and use it properly.

Dealing with Game Statistics

Although this club did not have their match results and player statistics implemented online, they did store their own statistics on a spreadsheet and had records dating back to the early 1970s. The spreadsheet was updated at the end of each season. This club had reached the knowledge stage of this application.

[6] VCA stands for the Victorian Cricket Association, the old name for Cricket Victoria. From now on, the researcher will substitute Cricket Victoria for VCA.

Club 2

This interview was conducted at a cafe on the main street of Colac with the President and Secretary. As a number of older and senior players had recently retired, some younger and junior players asked to play more leading roles within the club. The Secretary was in his mid 50s and was a semi retired builder and he had heard of some of the technology terms. The Vice President on the other hand, was in his mid 30s, was employed as a public servant and he was very familiar with the technology terms. At the end of each season, the Secretary processed all of the club statistics by hand – without even the use of a computer. This club only used two of the Internet application tools, Email and a Club Website.

Email

Neither of the interviewees were involved in the setup of email within the club. The club did have its own email account, however it was "not really used". The Vice President said that most of them had their own work or home email accounts, nevertheless it was not the communication tool of choice. However, the President did not have an email account. The Secretary added that the Committee were trying to get the younger members of the club involved with the communication side of administration. So far, the Committee mostly used email to communicate with the Association. However, they wanted to setup a mailing list, so they could send each player an email every fortnight. At the moment, the Committee printed much of the match activities and "either mail it out, or hang it up around the club rooms". The Secretary found out about the club having an email address through the communications that the Vice President had with Cricket Victoria. The main benefits the Vice President expressed about email were, that it was much quicker, cheaper and "less hassle than print outs and mail outs". The Secretary agreed with the cost factor. This Internet application had not really changed the way the administration worked, as the Vice President commented, "it is a bit hard when the President does not have an email address". The Secretary also added that most of the communication was completed through letters to the players. Email was not difficult for the Vice President to understand as he used it every day for work, therefore he had a chance to try it out and see it in operation before the Cricket club adopted it. On the other hand, the Secretary struggled to use it and had help from his wife and children. He did not have a chance to trial it, or see it in operation before the club adopted it. With the question about the factors leading up to email adoption within the club, the Vice President commented that there was no conscious decision to adopt it, "it just sort of happened". Both of them agreed that they would continue to use email into the future, however they needed more drive from the Association for its use. The Vice President said that whist the previous Association Secretary was "really good" with email use, the incumbent was not so. He added that "I think they are going backwards". This comment was in direct contrast to the Secretary of Club 1 who commented that "last season everything was done via paper mail and this year, it is all email".

Club Website

The Vice President was involved in the setup of the Club Website. The club found out about having a website through the state governing body, Cricket Victoria. Cricket Victoria went through a period around 2005 where they wanted all Cricket clubs to have a website, which was the time he set it up. The website had not really been updated or modified since then. However with the large amount of turnover of older players and the younger players coming through, the committee wanted the younger members to take care of the Club's website. It was clear that the Secretary had no real involvement on this area of the Club. When asked what was the club website used for, the Vice President answered that it was used for information, statistics (although there were not any on their website when the researcher checked later), history, player information and a way to communicate with former players. The benefits of having a Club Website were to keep in contact with former players and a "dump for

information for the players". The Secretary wanted an "official kick off" so people could see it and use it more. As the website was setup and then never really used, it had not changed the way they perform tasks at the club. Neither the Vice President nor the Secretary found it difficult to use or understand (however, the Secretary did not really use it). The Secretary said that they did not have a chance to trial it, as the website was free from Cricket Victoria. However, the Vice President added that they were "still trying it out and we really have not adopted it fully. We need to make an effort with it". They both had a chance to see it in operation before using it, with the Vice President looking at former clubs and his local football club for inspiration. The Secretary looked at the English club where he used to play for ideas about content for the website. The Vice President was involved in the decision to adopt it. Cricket Victoria was "encouraging us and the support was very good". They would continue to use it in the future, nevertheless they both agreed that they needed to promote the website and make an effort with it as it would save some time in diffusing information.

Association or Third Party Website

This Club did not use any third party system. The Secretary did indicate that they would use a website that the Association implemented, or the MyCricket website.

Dealing with Game Statistics

The Secretary calculated the players' statistics by hand at the end of each season and kept them (a summary total for each player) in a Microsoft Excel spreadsheet. With the lack of wide spread adoption of MyCricket or a similar, system in this Association this club would continue to process and record their player's statistics in this fashion.

Club 3

This interview was conducted with the President at his brother-in-law's house in Colac. The President was aged in his mid 40s and was an operations manager for a large company in the area. When the President was asked about how familiar he was with the technology terms, he replied that he was quite familiar with them. This club has two senior teams and two junior teams and mentioned that it made it easier for him to communicate, as there were only a few teams. This club uses email and SMS texting to communicate with players. They only used the MyCricket system to insure their players.

Email

The President was involved in the setup of email within the club. He was also on the executive committee for the Association. He was the youngest member of the committee at his club and started sending emails and now they regularly send each other emails. He had moved to have all of the players email addresses placed on file, however had not put them on the computer as yet. He found out about using email from using it from work and cited the benefit as "instant information transference to each other". It had not changed how he did his duties around the club at the time of the interview; however he said that it had given him a "change of outlook" and "some new ideas with sending things via email, like newsletters". In the beginning he found it difficult to use email, however he remarked "that he is certainly getting better". He saw email in operation and had the ability to trial it through work and then he introduced it to the club. The factor that lead to the decision was the same as the benefits of using Email, instant information transference. The President then stated that he started "sending out a couple of emails and it grew from there". He would continue to use it into the future, as it provided very fast communication with the committee and players.

Club Website

This club had a website and in the beginning the President helped setup the website in a minor way. However, now they have someone at the club (who was undertaking an engineering degree) to

administer the website. The President also added that he basically "tells the webmaster what to upload and it gets done". When asked what the club used the website for, he responded after a long pause with "because we thought we should. It makes people think we are on top of things". When asked about how he found out about having a website, he replied with "information from the VCA, lots of emails from the VCA". The state governing body, Cricket Victoria, went through a phase that strongly encouraged Cricket clubs to have a club website. He also mentioned that another club (which happened to be Club 2) had a website and saw it might be a good idea, however he said that Club 2's website "had not been touched in years". He said a benefit the Club Website provided was that in some small part it made them more appealing to the younger people. The President then added that the website had not changed the way he performed his duties, however he suggested that "maybe in the future it will". The President had no trouble understanding the application and helped with the "the nuts and bolts of it to start with, now they have someone else to handle it". The President did not have a chance to try it out before it was adopted, however he did have a chance to see it in operation through looking at other Clubs' Websites. When he was asked about the factors that led to the decision to adopt, he replied that it "basically one person showed some thought and made it happen". He would continue to use the club website in the future as it would appeal to young players and new members.

Association or Third Party Website

The Association did not have a website, and did not use a third party system. However, this club did use the MyCricket system for player insurance and to check the match fixtures. The President did go on to say there were one or two clubs that did enter their player's statistics online; however, this fell away because not everyone was doing it. This supported the notion that this was an Internet application the Association had to handle and maintain it, and that at least one ICT champion was needed within the Association.

Dealing with Game Statistics

The Club used spreadsheets to record their player's statistics. The President developed a "clunky version" and then handed it to someone in the club who was "good with Excel". This person enhanced it and made it better. The President wanted to place the statistics online, however they have an "obsessive scorer" who wanted to put everything onto a cricket program and not online. The impression that the researcher obtained from this was that scorer did not want the statistics online.

8.3.2 Framework and Results

This section summarises how Colac Cricket Association had progressed along the Innovation-Decision process for each Internet Application.

Email

This was the only Association analysed so far that did not have all of the clubs in the Knowledge stage for email. Some 70% of the surveyed clubs used email within this Association. For the clubs that were in the Confirmation stage of this Internet application, 66% of the clubs nominated that Secretaries used it. Figure 26 shows the results of the survey.

Stages of Adoption					**Confirmation Stage**						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Email	94%	88%	70%	58%	33%	25%	8%	66%	8%	25%	25%

Figure 26 - I-D Mapping from the Surveys and who uses it for Email

Two of the three interviewees gained knowledge about email through work and the other found out about email use through the state governing body – Cricket Victoria. Unlike the previous association, the interviewees generally gained knowledge from the governing body, and not through trialling it at work or through personal use.

In the Persuasion stage, the interviews conducted found the *relative advantage* of email use was faster and more effective communication with players and the Association. However, not all of the communication to these bodies were carried out through this means. The President of Club 2 did not have an email address and the Secretary of Club 2 said most of the communication to players were still undertaken through paper mail. The Secretary of Club 2 added that the communications to the players, which "at the moment, they print out most of their stuff and either mail it out or have it up around the club rooms", could be carried out via email. Nevertheless, the Vice-President of Club 2 added that having the use of email would not change his current communication processes, as the President of the club did not have an email account. The technology was not difficult for the Vice-President of Club 2 to use, as he used email every day at work. The Secretary of Club 1, the Vice-President of Club 2 and the President of Club 3 all used email at work (*trial*). The Secretary of Club 2 did not have a chance to *trial* the Internet Application. Only the President of Club 3 commented on *observing* email. Overall, the interviewees formed a positive view of email as a communication tool. Interestingly, the use of SMS was not discussed as a means of communication in this association. However, the more costly method of paper mail was still used at one club. It seems that paper mail has reached maturity, and email is set to take its place.

Only one interviewee said that *he* made the decision to adopt email. The President of Club 3 said that he was the youngest on the committee and decided to start sending emails to the other members of the executive committee. The Vice-President of Club 2 said that there was no conscious decision to adopt email.

Some of the interviewees had problems with the implementation of email. The Secretary of Club 1, the Secretary of Club 2 and the President of Club 3 all had problems using the technology in the beginning, with the Secretary of Club 2 having to enlist the efforts of his wife and children for assistance. However, once these initial problems were sorted out, communication was made via email to other members of the committee and the Association. The Secretary of Club 1 said that all the communications from the Association was undertaken via paper mail last year, however, now they preformed their duties via email. The Secretary of Club 2 indicated that they had implemented an email account, however "it is not really used". The President of Club 3 said he was the ICT 'champion' to implement this Internet communication application.

The general consensus was that Email would continue to be used in the future at these clubs (Confirmation stage). It made communication "a lot easier" and was "quicker, cheaper and less hassle than mailouts". However, one of the issues that had been raised, was the accountability of a club email address. If no one was checking this email account there was no point in having one. One aspect from the interviews that only appeared once so far, was the Association's involvement in email. The Vice President of Club 2 said the former Association Secretary was "good with email, however the current one is not". His comment was that he thought the Association was "going backwards" in this respect. The Vice President added to this with "that email was much quicker, cheaper and less hassle than print outs and mail outs". Overall, all of the interviewees will continue to use email into the future.

The Framework

Table 40 shows a summary of the comments of interviews relating to email. The Association provided information about Email, as well as the interviews being aware of it at work and through personal use. In relation to the Persuasion stage, the comments relating to *relative advantage* were about how email offers a much cheaper and less labour intensive alternative. However, players at another club were still being contacted via paper mail and the President at the same club did not have an email account. The comments regarding *compatibility*, were that email was very compatible with the existing process associated with the paper mail system. Most of the interviewees had *trialled* email at work and at home before adopting it at their cricket clubs. Only one of the interviewees said they *observed* email before they used it at their clubs. The President of Club 3 made the decision to adopt email. The Association communicated with clubs through email. Also, the interviewees were not involved in the setup and some needed some extra training in its use. The main comments in the Confirmation stage were about the improved communication between the clubs and the Association.

Table 40 - Revised Framework with the Colac Results for Email

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	+Found out via Association			+Club Communicates with Association +Association started to send Emails	^Association falling behind with email
Organisation				+Communication within Club ^Implement, but not used	+Communication within Club
Individual	+Found out via Work +Found out through Vice President	+++^^Relative Advantage +^ Compatibility +++^Trialability ^Observability	+President of Club 3 decided to Accept	+Individuals have their own email addresses which they used for the Club +President of Club 3 in the Implementation ^^^Training needed +Ease of Use	++Ease of Use +++Cost
Other			+Unknown at Club 2, "Just sort of happened"		

Club Website

Only 29% of the clubs surveyed have adopted a Club Website and again, only 29% of the clubs were in the Confirmation stage. Most of the clubs knew about having a Club Website (94%), however, less than a third have implemented one. So far, this was the lowest rate of adoption from the Associations covered. All of the Secretaries from the clubs in the Confirmation stage used the club website. Only 40% of the Coaches and Players from clubs in the Confirmation stage used the Club Website. Most of

the clubs in this Association did not use this Internet application to disseminate information. Figure 27 shows the results of the survey.

Stages of Adoption					Confirmation Stage						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
C W	94%	64%	29%	29%	20%	20%	20%	100%	20%	40%	40%

Figure 27 - I-D Mapping from the Surveys and who uses it for Club Website

Generally the interviewees found out (the Knowledge stage) about this Internet application through the state governing body – Cricket Victoria. Cricket Victoria wanted all of the Cricket clubs within Victoria, to have a website and this was how these Cricket clubs found out about having website. Generally, through email, as a communication method. The clubs were contacted by Cricket Victoria by email to give them knowledge about the website option.

During the Persuasion stage of the Rogers (2003) Innovation-Decision process, an argument is made decide to adopt it or not. In relation to *relative advantage*, Club 2 said the Club Website would have the benefit of reaching and communicating with former players. The Secretary of Club 2 also added that it could be used as a repository for information to their current players. The President of Club 3 was encouraged by the state governing body to have a Club Website. Neither the Secretary of Club 2 nor the President of Club 3 had a chance to *trial* this Internet application, however the Vice President of Club 2, the Secretary of Club 2 and the President of Club 3 did *observe* it before it was adopted. The Secretary of Club 2 even had a look at the website of his former club in England for some ideas.

The decision to adopt this Internet application was influenced by Cricket Victoria and through an ICT champion at the club. Cricket Victoria went through a period where they encouraged cricket clubs to possess a website. The decision to adopt was made via various sources; these were a committee decision, a representative on the committee, finally, a club member outside the committee. The decision to adopt was made for a variety of reasons, such as Club 3 thought it would make them look for professional as a committee and Club 2 was persuaded by the pressure from Cricket Victoria.

The implementation of the club website was undertaken in a number of ways. Only the President of Club 3 said he was involved in the setup. Whereas, the Vice President of Club 2 and the Secretary of Club 2 said they had entered information on their website (after it was first implemented) and wanted an "official kick off", so it was "in the mind of the players". None of the interviewees had problems with the complexity of the Club Website. The President of Club 3 even said he had no trouble understanding the application and helped with the "the nuts and bolts of it to start with".

During the Confirmation stage, the Vice President of Club 2 suggested that the innovation would be continued at another time. However, this example of 'continuing an innovation at a later date', was not that clear cut. The website had been built (implemented), but had not been updated since. However, the Secretary of Club 2 added that they (the committee) really needed to "push it, make an effort with it and it will take some time". The President of Club 3 said that they would continue to use it into the future and it made it much more systematic for them as they "have someone at the club to run the website now. The President basically tells his website master what to upload and it gets done".

The Framework

Table 41 shows the research framework summarising the comments related to the Club Website. The Knowledge stage of the club website came from Cricket Victoria. In the Persuasion Stage, the comments relating to *relative advantage* were about how Cricket Victoria strongly encouraged clubs

to have a Club Website. The interviewees said they could disseminate information to their members, particularly the younger ones. Two of the interviewees said they did not have a chance to *trial* the innovation. Three of the interviewee *observed* other websites, which included Football clubs and other Cricket clubs. Cricket Victoria did influence the decision to adopt, as did the club and an ICT 'champion'. In the Implementation stage, the Organisation setup the club website to communicate with the players, however, wanted an official "kick off". A number of interviewees set up their club websites. The comments in the Confirmation stage were about the need for a person to look after the website, as it was not being modified. Adding to this, most of the clubs interviewees would continue to use it in the future.

Table 41 - Revised Framework with the Colac Results for Club Website

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	++Found out via Cricket Victoria	+ Relative Advantage	+Cricket Victoria Influenced		
Organisation			+Made Club Committee Look Professional	+Official Kick Off Required +Used for Communication to players	+^Webmaster Used/Needed +Appears to Younger Members ^^Not Modified
Individual		+++Relative Advantage ^^Trialability +++Observability	++ICT Champion Decided To Accept	+ICT Champion Set It Up +++Easy to Implement	++Would Continue to Use It ^More Work Needed
Other					

Association or Third Party Website

Even though this Internet application was controlled by the Association and generally a good method of disseminating information, this Association did not take full advantage of it. Only 17% of the clubs were in the Confirmation stage, which represents only three clubs. This Association did not have a website, so the clubs were using a third party system. This means at some level the clubs were taking it upon themselves to adopt this application. Figure 28 shows the results of the survey.

Stages of Adoption					Confirmation Stage						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Assoc	64%	47%	17%	17%	0%	0%	0%	100%	0%	0%	0%

Figure 28 - I-D Mapping from the Surveys and who uses it for Association Website

Knowledge Stage

This Association was labelled by its own clubs as being "a little behind". This was shown very clearly in this Internet application. This Association undertakes the majority of its administration using paper mail. The third party website that was discussed here was the non statistical application of Cricket Australia's online cricket system MyCricket. This included aspects of an online player database and access to the partnership arrangement between Cricket Australia and an insurance company. This partnership was beneficial for cricket clubs as the majority of cricket clubs in Australia were using the

same insurance company and benefitting from scales of economy (cheaper insurance). The Secretary of Club 1 said he found out about the MyCricket through a Cricket Victoria 'roadshow'. The two interviewees at Club 2 did not know that MyCricket existed.

In the Persuasion stage, the Secretary of Club 1 suggested that the *relative advantage* of the Third Party online system was that player insurance was much cheaper, as did the President of Club 3. The President of Club 3 wanted the fixtures online as well. This innovation had not changed the way that Secretary of Club 1 conducted his business, this might be because of the innovation had not been used to its full potential. The Secretary of Club 1 did not have a chance to *observe* the innovation before it was used. Overall, the interviewees could see the potential of this website, however seemed to be frustrated with the lack of action from the association to implement all of its features, such as fixtures, ladders, and players statistics.

The decision to implement this innovation had not been decided upon by the Association. However, the Secretary of Club 1 had made the decision to adopt this innovation and use it to access cheaper insurance for his club. Thus , although in operation, this innovation had not been used for its designed purpose.

The Association did not have a website for the summer season of 2008/09, however the researcher had since returned to the website and checked to see if this had been implemented (mid 2010) - it had not. This Association still did not have a website even after the end of the summer season of 2009/10. However, there were comments regarding the use of the MyCricket website used for insurance purposes

As the Association had not implemented a website, there were still comments related to the Confirmation theme. The Secretary of Club 1 and the President of Club 3, commented that a couple of clubs started to put their player and match statistics online, but gave up as they were the only clubs doing it. However, this was clearly moving into the territory of the Online Statistics innovation. The Secretary of Club 1 also adds that this innovation had not provided much benefit other than the insurance side and had not been used as the Cricket "hub" it should be.

The Framework

Table 42 shows the research framework summarising the comments related to the Third Party Website. The Knowledge stage of the Adapted Innovation-Decision Process showed that Cricket Victoria gave information about the innovation. The comment relating to *relative advantage* was concerning a change of Secretary at the Association level and that they wanted to "go down this (becoming more electronic) path". The comment regarding *compatibility* was that it did not change the way the Secretary at Club 1 conducted the administration at his club. One of the interviewees *trialled* the third party's website with using a section of it for insurance and another did not have a chance to *observe* it. As this innovation was still in the Persuasion Stage at this Association, there were no more themes. However, this innovation is the online statistics application, and not an avenue for inexpensive insurance. Thus, this association is in the persuasion stage for online statistics, but some of the interviewees are in the Confirmation for the website. The researcher has added all the comments about the MyCricket website to show the full story.

Table 42 - Revised Framework with the Colac Results for Third Party Website

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	+Found out via Cricket Victoria				
Organisation					^^ Club Gave Up Use ^Not Used For Its Intended Purpose
Individual		++^Relative Advantage ^Compatibility ^Trialability ^Observability	+Secretary Made Decision to Adopt	+Player database ++Used MyCricket for Insurance	^Not Used For Its Fullest Potential +Ease of Use
Other					

Online Statistics

There were only three clubs that used this application. However, only one of those clubs used a Third Party system as well. Because this is an Australian association, they did have free access to Cricket Australia's MyCricket. If this Association chose to, they could progress along with the adoption of this Internet application relatively quickly and with little or no expense. However, there would be plenty of effort needed in setting up the innovation. Figure 29 shows the results of the survey.

Stages of Adoption					Confirmation Stage						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Stats	88%	64%	17%	17%	0%	0%	33%	33%	0%	0%	33%

Figure 29 - I-D Mapping from the Surveys and who uses it for Online Statistics

This Association had not implemented an Online Statistical program. However, the clubs seemed to know the benefits of the program and wanted it implemented by the Association. This was demonstrated with the Secretary of Club 1 saying that the Association needed to "take it a step further" and use it properly. This comment by the Secretary of Club 1 shows that he knew about the innovation. The President of Club 3 said the club wanted to put their match statistics online, however they have an "obsessive scorer" who resisted. The impression that the researcher obtained from this was that scorer wanted to 'own' the statistics and not have them online. The clubs seemed to have gained the knowledge of this through using the insurance aspect, and could see the potential that this online statistics program could deliver.

Although the clubs that were interviewed were not in the Persuasion stage, they have been entering their statistics onto Excel spreadsheets. Club 1 have records dating back to the early 1970s on these spreadsheets. Thus, there were observations made by the interviewees that related to the Persuasion stage.

Implementing a system like this was the decision of the Association. This Association had not made a decision whether to implement this or not. Even after the summer season of 2009/10, this Association had not implemented this innovation. Although the President of Club 3 had made the decision to implement this innovation, he did not have the capability to do so.

This Association had not implemented this system. Their clubs saw the benefits of it and some had even attempted to record their player's statistics online themselves (this was stopped as only a few of the clubs were entering their statistics). However, with a system like this, it is a 'one in, all in' proposition. There were no observations made by the interviewees that related to the Implementation stage.

There were no observations made by the interviewees that related to the Confirmation stage.

The Framework

Table 43 shows the research framework which summarises the comments relating to Online Statistics. The Knowledge stage of the Adapted Innovation-Decision Process shows that one of the clubs wanted to have their player statistics online, but some did not know about the MyCricket System. As like an example in the Auckland data, the club was in the Knowledge stage as they knew about the innovation, they just did not know the system was already in place. As there were no other entries past the Decision stage, they have been left blank.

Table 43 - Revised Framework with the Colac Results for Online Statistics

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution					
Organisation	[redacted]				
Individual	+Want to put Online +Wants the Association to Implement it		+President of Club wanted to 'put stuff' online		
Other					

8.3.3 Reflections for the Next Round of Interviews

This round of interview and surveys ran fairly smoothly. However, this method will only work if the researcher can stay, or travel easily to, the destination. This will be a challenge with overseas destinations; however, having learnt from past data gathering exercises, the researcher must collect data when it is available.

8.4 Home Countries Premier Cricket League Division 2 East

This Association was based approximately two hours drive north of London, England, in a rural area. Home Countries Premier Cricket League Division 2 East, like the Australian Associations, used a national online statistics program. That system was called PlayCricket. This system was introduced in England in 2005, earlier than the Cricket Australia's MyCricket (from 2008/09). This was a very large association with 86 clubs and 16 Divisions. As this was such a large Association, the President of the Association informed the researcher that it was not practical to hold one delegates' meeting of all of the Association, so they have multiple meeting across the different divisions. Therefore, only one of the divisions was investigated.

The data collection for this association was undertaken whist the researcher attended a conference in England.

8.4.1 Data Collection

This was the second time an overseas Association was used in data collection. Similar to the Auckland data collection, the interviews were conducted before the surveys were administered. This was due to the researcher being in England for a conference. The surveys were given to the Association President with instructions on how to administer it during their next delegates meeting. Therefore, the return of 12 surveys represented only one of the divisions, because of this, the strategy of administering the survey at a delegates meeting had not worked as successfully as the researcher had hoped. As the reason for this was to avoid the prospect of having a meeting with 86 delegates and have it last for hours. The interviews were conducted during the season (2009).

Surveys

There were a number of very old clubs at this Association. Seven clubs (out of the 12 surveys returned) were over 100 years old, with two of those clubs being over 170 years old and one being 197 years old. The youngest of the clubs was 20 years old. The average age of the clubs was 96 years, so far easily the oldest mean age of any association tested. The gender breakdown of the members surveyed were nine males and three females. Out of the 12 surveys returned, there were 14 positions held, with Committee Members and Secretaries accounting for three of those positions each. On average there were five senior teams and six junior teams per club. The club with the highest amount of teams had ten senior teams and 15 junior teams. Considering each cricket team has 11 players, these clubs incorporated a vast number of people. Figure 30 provides a summary of the finding from the surveys.

Stages of Adoption					**Confirmation Stage**						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Email	100%	100%	92%	92%	72%	45%	90%	100%	72%	90%	72%
C W	100%	83%	75%	75%	55%	44%	55%	100%	77%	77%	66%
Assoc	83%	66%	50%	50%	50%	16%	0%	83%	50%	50%	50%
Stats	100%	92%	75%	75%	44%	44%	55%	77%	66%	66%	55%

Figure 30 - I-D Mapping from the Surveys and who uses each Application

Email

All of the respondent clubs were at least in the Persuasion stage. Only one club having not yet adopted email, and 92% were in the Confirmation stage. All of the 11 clubs to have adopted email, the clubs have nominated their highest users were their Secretary with 100%, followed by Treasurers and Coaches (90%). The average length of time that email had been adopted at these clubs was just over seven years, with the longest being 12 years and the most recent being three years.

Club Website

Nine of 12 clubs (75%) had a Club Website and were in the Confirmation stage. All of the clubs would continue to use it into the future. The Clubs that have implemented this application indicated that the major users of the innovation were the Secretaries (100%), followed by Committee Members and Coaches. Of the three clubs that were currently in the Persuasion stage, the President of one of the clubs had decided to adopt it and the other two clubs were not planning to use it. All of the clubs surveyed had heard of using a website for a Cricket club. The average length of time the clubs have had a website was just over five years, with the longest being 12 years and the earliest only two years.

Association or Third Party Website

Six of 12 clubs used the Association's Website. That reflects on the Association, as it seemed they have not been promoting their website enough. Out of the clubs that were using the Association's website, all of them would continue to use them into the future. The major users from those clubs that used this website were the secretaries (form five of the six clubs that used the website). The researcher did not think that was a surprising, as the Secretary was generally the link between the club and the Association. The other major users were the Presidents, Committee Members, Players and Coaches. Clubs that have been using the website they had been doing so for an average of a little over five years. The longest user was ten years and the shortest was two years. Out of the clubs that have not adopted it, two of them were planning to use it. However, of the four clubs planning not to use it, two of them had heard of it and the other two had not.

Online Statistics

More clubs were using Online Statistics than were using the Association's website. Nine of the 12 of the clubs used Online Statistics and would continue to use them into the future. Out of the clubs that had adopted it, the most prolific users were the Secretaries (7 of the 9 Clubs), then the Committee Members, the Coach, Treasurers and the Players. The average length of time that those clubs has used online statistics for was almost five and a half years, with the longest being ten years (for two clubs) and the shortest being two years. Of the three clubs that had not adopted Online Statistics, two of them have made a decision to adopt it. The club who had not made a decision on whether to adopt it, had heard about the Internet application.

Summary of the Surveys

The average number of years all clubs in this Association had adopted these Internet application was 4.3 years. This figure was ranked third when compared to Auckland on 7.61 years, North Metro on almost five years and Colac on 3.1 years. There was only one club that had not reached the Confirmation stage in any of the applications, Club 1 and only two clubs that have reached the Confirmation stage in one or two of the Internet applications. Therefore, the other nine clubs were in the Confirmation Stage of at least three or more Internet Applications. There were three clubs that had adopted all of the Internet Application. Figure 31 shows how long each of the clubs have adopted each of the Internet Applications

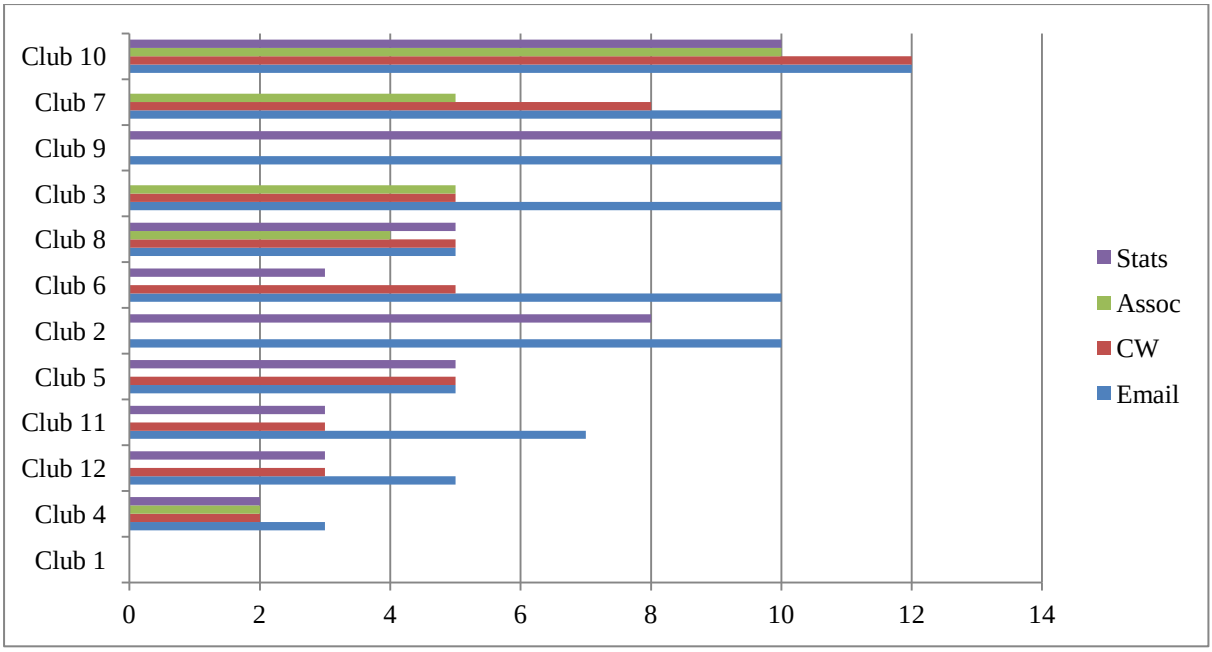


Figure 31 - The Amount of Years Each Club had used an Application

Interviews

This phase of the data collection involved interviews with four club members from two of the Association clubs. The interviewees were all on the committee of their clubs and had an appointed position, like Treasurer or Secretary.

As mentioned earlier, these interviews were conducted before the surveys were administered; the researcher travelled to England for a conference and conducted the research whist he was there in 2009.

Club 1

This interview was conducted at this club's clubrooms just before a committee meeting, The researcher interviewed the Club Chairman and the Secretary. The Secretary of the club was 27 years old and was employed as a Research Chemist. The Club Chairman was in his 50s and worked as a Maintenance Engineer. Both of them were familiar with the technology terms. At this Club, the four Internet applications under review were all used. This Club used PlayCricket, which was a national online statistical program that the English and Welsh Cricket Board introduced in 2005. This Club had six senior teams, three social Sunday teams (a less formal competition), six junior teams and three female teams.

Email

The Secretary and the Club Chairman both indicated that neither of them were involved in the set up of email at the club. This was undertaken by the *Development Manager*. The Development Manager of the Club was a position for which the appointee carried out tasks outlined by the Executive Committee at the club. The Development Manager setup a hotmail account for the club. The Club Chairman indicated that the email account was primarily used for communication purposes. The Secretary agreed with this, also adding that the account was used for "sending out information to the players about meetings, sending emails to groups within the playing group and for administration duties (generally with the Association)". The Club Chairman had been using email for the previous 15 years through work and personal use, whereas the Secretary found out about it (the Club's email account) through the Club's Development officer. When asked about the benefits it provided the

Club, the Secretary added that "it is much easier for the person sending out the message (compared to paper mail) and the cost to send it (virtually free)". He also answered that "on a Saturday he would rather call people than email, as not everyone checks their email on Saturdays and I also know they have got the message". The Club Chairman was the only current Committee Member when email was introduced at the club and he said that "it makes it much easier than telephoning people". When asked whether email was difficult for them to understand, the Secretary did not have any problem, however the Club Chairman had a problem at the start. Both of them had a chance to trial and see email in operation through their own personal accounts. The Secretary and the Club Chairman were not involved in the decision to adopt email within the club, however the Development Manager was told by the President to "sort an account out". When asked if the club would be using email in the future, the Secretary said "yes and so does the telephone, they have their place". Whereas the Club Chairman said "yeah, but I don't mind calling, or emailing". It seemed that the Executive Committee would use the telephone and email interchangeably. However they wanted to email players to communicate...except on Saturday mornings before the games.

Club Website

This Club had three websites, with one being recently implemented. The interview focussed on their latest Club Website. The Association had moved from HitsCricket to the national governing body's system, PlayCricket. Therefore, the club had to move their website from one site to another. HitsCricket was a commercial third party system in which clubs pay a fee and were allowed to have their statistics online, as well as a player database, an email account and a club website. The Secretary was not involved in the set up of the website, however the Club Chairman was indirectly involved. The Club had someone from within the club set it up, then the Executive Committee gave feedback on it so it could be "fixed up". The Secretary said the Club used the website to "put statistics on and information for members, and/or players so they know what is going on". The Club Chairman added that "we put on match results, newsletters and the six Saturday sides on (before the game)". When asked how they found out about having a website for the club, the Secretary said that they found out through the Club Development Manager (a position within the Association that conveys information to them). The Club Chairman said he found out "through natural progress, it is the way of the world, it (the website) is a communication tool". The Secretary said that "the benefits of the website were to inform people and it's the first point of call for prospective members". Adding to this point, the Club Chairman said that it was "a great communication tool". The only way the website had changed the way the Secretary performed his role, was by having to keep the website up-to-date for the members/players. For the Club Chairman, the website had attracted new players and was another communication tool. As the interviewees did not administer the website (they have a person from within the club for this), the question about whether it was difficult for them to understand was not really applicable, as they only needed to tell the webmaster what to put on the website and "it is done". The Club Chairman also added that a "website is only as good as the administration handling it". Neither of them had a chance to try it out. Only the Club Chairman had a look at other websites to see what was on them. The Secretary was not involved in the decision to adopt it, however the Club Chairman was and the decision was made because "a website offered a forum for giving information to players and exposure for their sponsors". They would continue to use it into the future as it was a "great communication tool for our players".

Association or Third Party Website

Neither of the interviewees were involved in the setup of the Association's website, which had been a theme of the other interviews to this point. The Secretary used the Association's website for "finding out fixtures and league tables (ladders)". Whereas the Club Chairman used it for "junior (team's)

results, general information, coaching material and new information about County Cricket". When asked about how they found out about the Internet application, the Secretary said through the previous Secretary at the Club and the Club Chairman said through "word of mouth at the Club". Both of the interviewees agreed that the usefulness of the Association's website was for distribution of information. The Secretary added that that he was "not sure how they would do it any other way". The Secretary was 27 years old and this answer might reflect his age and expecting every organisation to have a current website. The Association's website had not changed the way the Secretary performed his tasks, as it was there before he became Secretary. However, the Club Chairman still remembered receiving the newsletters and fixtures through paper mail and he added that "it's more up-to-date information now". Neither of them found it difficult to use. However, they did not have a chance to trial it, or see it in operation before the website went 'live'. As this was the Association's website they were not involved in the decision to adopt it. The Secretary and the Club Chairman would continue to use the website into the future, and the Secretary revealed that "it is a great provider of information".

Dealing with Game Statistics

This Association was using the national online statistical program called PlayCricket, which they had been using since 2005. The system was the National Governing body's online statistical software, in which clubs and leagues used purpose built Cricket software to record match results and player's statistics. This system also had a website feature for clubs. PlayCricket is free to all English and Welsh Cricket Board affiliated clubs and leagues. As this was a National Governing body's system, neither of the interviewees were involved in the setup of the application. As the Secretary was also the Vice Captain of his team, it was his role to enter the scores at the end of the day's play. However, the Club Chairman used the website to notify him of the club's trophy winners and look at the season's statistics. They both found out about the Online Statistical program through the Club Development Manager at the Association. The two interviewees suggested different benefits that the software provided. The Secretary said "that before the program, all of the player statistics were on Excel spreadsheets and no one got to see them, except for the end of the year. Now everyone can see them all of the time". The Club Chairman said that "it gives you instant access to the statistics and players can see if they are doing well". The only way this application had changed the way the Secretary had performed his duties was that they did not have to use the Excel spreadsheets any more and he had a new duty as Vice Captain to input the match results and player statistics every week. It had not changed the duties of the Club Chairman. It was not difficult for each of the interviewees to use and understand. The Secretary did have a chance to trial it before the start of the season. This was through training by the Association, however did not see it in operation before then. The Club Chairman did not have a chance to go to the training, nor see it in operation before it was adopted. Neither of them were involved in the decision to adopt. The Secretary noted that "it was forced upon us". The Secretary would continue to use it in the future, not only because he was made to by the Association, but because it made things "much easier". The Club Chairman would continue to use it as well, as "it gives me access to match results and players statistics in an instant".

Club 2

Two interviews were conducted with members of this club. One person was a Committee Member who was a retired manager (at an aerospace organisation), aged in his 50s. This Committee Member's major role at the Club was to administer school programs. The other interviewee was a sport journalist, aged in his 40s, that acted as a Committee Member and the Webmaster for the club. This Club had ten senior teams, however there were over 220 children that needed to be overseen at this club through their schools program. This was not represented on the surveys as they probably did not count the school teams as their own. The first Committee Member said that "when you have junior

and school kids, you are not only dealing with them, but all of their parents, which could be up to 400 parents". The Webmaster added that in total, there were approximately 700 people that have regular contact with the club. The researcher could see how effective use of these Internet applications could benefit such a large organisation. Both of the interviewees were familiar with the computer terms. This club employs all of the Internet applications that were being investigated for the study. The Committee Member added that "the Club had become very large and the administration of it became a bit of a mess. We are still looking for a business tool for our HRM (*human resource management*) needs. PlayCricket does not have a club management tool, and business HRM programs don't have a Cricket function built into them. We are stuck in the middle".

Email

This club used email to keep in contact with their members, junior's parents, sponsors and other people around the club. The Webmaster said he was involved in the setup of the email at the club. The Committee Member commented that "the amount of work (involved with operating the club) had gone from about two hours to about six hours a day. Email cut that down". They found out about this Internet application through work and personal use. Both of them had been, or were in, professional positions and had been using email for a number of years. Both of them agreed that email had changed the way they performed their tasks, however the Committee Member said that "the problem with email is that most people will check it, however a couple won't and you need to call them". However, the researcher had the impression, that even with this problem of some people not checking their email, it would still reduce their work load. The Committee Member also added that the sponsors also receive a weekly email to tell them the events at the club. As stated before, these interviewees had, or still had, professional positions and used email at work. Because of this, they both had the opportunity to trial it before it was implemented at the Cricket Club. Therefore, it was not difficult for them to understand or use it. The Webmaster was involved in the decision to adopt the Internet Application, as "it cuts down a lot of time when communicating to people". They were going to keep using email at the club, as it cut down time communicating to players and junior's parents.

Club Website

The club had a website and these two interviewees had played their part in its development. The Webmaster did not help in the beginning, however now manages it. It the beginning, he was on the "fringes" of setting it up. The Committee Member helped with adding photos to the website's photo gallery. When asked what they used it for, the Webmaster said that it was used for listing forms and general club information. The Committee Member then added that now that "the PlayCricket System has a Website function, it is easy to link your statistics to your website. We also use it for a database for player's statistics, team management, internal and external communication". They found out about website through seeing others on the Internet. The Committee Member then added that in the beginning they had a basic website (electronic brochure) and when they moved from Hits Cricket to PlayCricket they spent more time improving on the website. When asked about the benefits the website provided the club, the Committee member said that "we have lots of information on our website and it's easy to tell people to look at the website, however we have to keep it updated". The Webmaster commented about how his duties have changed, "now I have more responsibility at the club". However, before the website, we used to make huge lists of players and information sheets to send out, now it's all online". The decision to adopt this innovation was made by the Club Committee The Committee Member agreed that "it has definitely made team management easier". The Webmaster had difficulties in the beginning with the website, whereas the Committee Member said it was very easy. The researcher believes the two interviewees had different perspectives on this. The Webmaster had to learn how to set up the website and possibly code it, whereas the Committee

Member only interacted with and used the finished product. The Committee Member did not trial it, or see it in operation before it went 'live'. However, the Webmaster did trial it (as well as test it) and visited other clubs' websites to see what they had on them. The main factor which lead to the adoption of the website was that it was a revamp of their electronic brochure website when it moved from Hits Cricket to PlayCricket. They saw a need to give their players and members the information they require for playing Cricket. The Webmaster said they were going to continue to use the website into the future and "it's a way of conveying information to our members".

Association or Third Party Website

The Association's website was managed by the Herts (Hertfordshire) Cricket County. Neither the Webmaster nor the Committee Member were involved in the setup of the Association's website. The Committee Member used the Association's website for information about the league, league meetings and saw it as a good communication tool. He found out about the website through an email from the association. The Committee Member said that the main benefit was the information that was housed on the website. It had changed the way he performs his tasks. The Committee Member said that "before the website, everything and I mean everything was sent via (paper) mail. Now everything is on the website". The researcher then asked if this had also cut down the amount of delegate meetings and he replied with "no, there are about the same amount". The Association's website was not difficult, for either of them to understand. As this was the Association's website, neither of them had a chance to try it out, or see it in operation before it went 'live'. Neither of them were involved in the decision to adopt it and they would continue to use it into the future as it gave them an abundance of information. The Committee Member also added that for the 'business side' of the Cricket club, they had been using the England and Wales Cricket Board's website. This website offered them a chance to "get into the schools" and promote the club, and school Cricket clinics. It also gave them a list of a large amount of funding sources for their cricket activities; it was a "wealth of information". The Committee Member said that was site was "brilliant".

Dealing with Game Statistics

This club used the Online Statistical Package called PlayCricket. Neither of the interviewees were involved with the setup of the PlayCricket system. The Webmaster said that the innovation was used as one big database to keep track of players, for example;

- Who has a 'working with children' permit (a permit that legally allows a person to work with children after they have undertaken a police check),
- Who was a level one coach and player details like phone numbers and email addresses.

The Committee Manager then added that he used it for information about the competition, such as fixtures and it housed all of the statistics about the players. They found out about the innovation from the Association who wanted all clubs to use it. The benefits that it provided for the club are, as the Committee Member stated, "that you can have a database online and access it anywhere. Also the scores don't need to be phoned through". This was a change in how they used to report the scores to the Association. Someone would phone the association and tell them the match scores. This particular association were not interested in the player's statistics, they believed this was the club's duty to keep a record of them. Now the club delegate entered the match results and the player's statistics online and all of the calculations were processed automatically. Neither the Committee Member nor the Webmaster, had trouble understanding it, or using it. The Committee Member did not have a chance to trial it, nor observe it before the association started using it. Training was given to the Secretary of the club by the Association. The interviewees were not involved in the decision to adopt this innovation. However, this club was still looking for a HRM business tool to handle their personnel

requirements. Nevertheless, the questions was, would the company that looks after this third party system be willing to spend the extra money and time necessary to cater for clubs of this size? Or were clubs this size in such a low minority, was the expense justified for the clubs that needed it the most? The club would continue to use it into the future, as it saved time.

8.4.2 Framework and Results

This section summarises how Home Countries Premier Cricket League Division 2 East had progressed along the research framework adoption model for each Internet Application.

Email

All but one of the clubs surveyed were in the Confirmation stage of this Internet application. This was similar to that noted for Auckland and North Metro. However, it was far more advanced than the Colac Cricket Association, who was only at 58% for the Confirmation stage. From the clubs in the Confirmation stage, the Secretaries were the greatest users. Figure 32 shows the results of the survey.

Stages of Adoption					**Confirmation Stage**						
					Administration					*Players*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Email	100%	100%	91%	91%	72%	45%	90%	100%	72%	90%	72%

Figure 32 - I-D Mapping from the Surveys and who uses it for Email

Knowledge Stage

The two interviewees from Club 1found out about using email at their club through the Development Manager who initiated it and set up the account for the club. The second club that was interviewed found out about using email through work and personal use. This had been a common channel of knowledge for this application. Persuasion Stage

In the Persuasion stage, all of the interviewees had a chance to *trial* email through personal use at work. This was consistent with findings from the other Associations. The Webmaster of Club 2 commented that the *relative advantage* of email also "cuts down a lot of time when communicating to people". Overall, the interviewees formed a positive opinion of email, particularly seeing the benefits through their use at work and personal lives.

The decision to adopt this application was made by the Webmaster of Club 2. He commented that it was adopted because "it cuts down a lot of time when communicating to people". However, the Secretary of Club 1 said that the Development Manager was told by the President to "sort out an account" (implement it). The researcher felt that this was an Organisational influence as the people interviewed did not make the decision, it came from within the organisation.

This innovation was implemented by the Development Manager at Club 1. However, once the account was setup, the Club Chairman had problems with using it at the start. The Secretary and the Club Chairman of Club 1 said that neither of them were involved in the set up of the innovation. The Secretary of Club 1 said that "On a Saturday he would rather call people rather than email, as not everyone checks their email on Saturdays and I also know they have got the message". This demonstrates the problem of asynchronous communication, not knowing if the other person has received the message. Club 2 had no problem with using it, as they have used it in the workplace and through personal use. The clubs that were interviewed said that they could send out emails to a whole group of people and within playing groups, for example the first team. Added to this, the Committee Member at Club 2 said the club sent out an email to the sponsors to keep them "in the loop" about the club. The Secretary of Club 1 did not have a problem using email.

All of the clubs interviewed would continue to use email into the future. The Secretary and Club Chairman had some mixed feelings about using email, with the Club Chairman happy to "call or email". As Club 2 had such a huge number of people involved at their club (nearing 700), the communication time between the Executive Committee and the Players and their junior's parents, have been dramatically reduced with the use of email. The Secretary of Club 1 said that it was "much easier for the person sending out the message (compared to paper mail) and the cost to send it (virtually free)". However, the Committee Member of Club 2 also added that "the problem with email is that most people will check it, however a couple won't and you need to call them". Generally when you contacted people on match day, it was usually for a last minute change and only to a couple of people at the most, compared to a mass email at the start of the week before a game. The Club Chairman at Club 1 commented that the using email "makes it easier than telephoning people". Overall, email will be continued to be used at this association. It seems that bulk email messages will reach most of the club, however there are some instances where contacting by phone is more applicable, for example on a match day.

The Framework

Table 44 shows the research framework which summarises the themes of the interviews. Individuals found out about the innovation through their Club Development Manager, through work and through personal use. The comments relating to *relative advantage* showed that it was easier to contact people via email as a message could be sent to multiple people cheaply and quickly. The comments regarding *trialability* showed that it was used in a work and personal capacity before Cricket clubs. The Webmaster and the Club Development Managers influenced the decision to adopt. Club 1 and Club 2 used email to send out a newsletter to their sponsors. The main comments in the Conformation stage was that email generally saved time for the volunteer, as mass messages could be sent out all at once. However, on the negative side, if some did not have an email account, the delegate would need to phone them.

Table 44 - Revised Framework with the Home Countries Premier Cricket League Division 2 East Results for Email

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution					
Organisation	[redacted]		^Club Development Managers were told too	^Calls on Match Days +Sponsors receive Information about the Club +Used for Sending Information to Members	^Need to call if Players did not check email
Individual	+Found out via Development Manager ++Found out via Work and Personal Use	+Relative Advantage +++++Trialability	+Webmaster decided to Adopt	+Account Setup by Develop Manager +Used as a Communication tool +++Ease of Use ^Problems using it at the start	++"Has its place as a communication tool" +++Cuts Down Work for Volunteer +Easier than Calling People
Other					

Club Website

From the clubs that were surveyed, 75% were found to be in the Confirmation stage of the Innovation-Decision Process (Rogers, 2003). This was less than the email application. When compared to the other Associations, it was ranked third behind Auckland (100%), North Metro (95%), with Colac ranking last on 29%. The most common users of this application in the Confirmation stage were the club Secretaries (100% of clubs), follows by the Committee and the Coaches. Figure 33 shows the results of the survey.

Stages of Adoption					**Confirmation Stage**						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
C W	100%	83%	75%	75%	55%	44%	55%	100%	77%	77%	66%

Figure 33 - I-D Mapping from the Surveys and who uses it for Club Website

Knowledge Stage

In the Knowledge stage, the Secretary of Club 1 found out about having a website via the Association. The Association had a volunteer that provided clubs information to "better the club". One aspect of this was to have the clubs on the Internet and using their online applications of PlayCricket. Whereas, the Club Chairman of Club 1 and the Webmaster of Club 2 both found out about having a website through seeing them online.

In the Persuasion stage, the Chairman of Club 1 commented that the club website was a great communication tool (*relative advantage).* After the club had implemented an electronic brochure on one website, the Association changed online administration systems and they had a revamp on their website. In regards to *compatibility*, the new system that the Association moved to, the PlayCricket system, had a website function which allowed the clubs to have their player's statistics on their website. Out of the four people interviewed, only one of them *trialled* the Club Website before it was adopted. This was the Webmaster of Club 2. Only the Club Chairman of Club 1 and Webmaster of Club 2 looked at other websites from other clubs to "see what was on them

The decision to adopt a Club website was made by the Club Chairman of Club 1 (an Individual Decision), and by the Club Committee (Organisational Decision) in Club 2.

The Secretary and the Club Chairman of Club1 were not directly involved with the setup of the application. This club had a Webmaster (at Club 1) who took care of their website. The Webmaster of Club 2 commented that in the beginning of the process, he was on the "fringes" of setting up the website. The Committee Member at this club also helped with the updating the photo galleries. The Club Chairman added that "we put match results on, newsletters and the six Saturday sides on". One negative comment to arise was that the website added for work for the club. The Secretary of Club 1 commented that his club had three websites recently and it was frustrating having to start again each time. Overall, in this Association, this innovation was implemented by a webmaster or ICT champion in individual clubs, with someone helping to upload extra information or photos were required.

Both of the club's interviewees would continue to use their club website into the future. The common theme between the two clubs was that was it a great tool for communication to their players. Adding to this, the Committee Member of Club 2 said that it had "made team management easier". The Club Chairman of Club 1 had cautioned against the use of it with, "a website is only as good as the administration handling it". The comment was echoed by the Committee Members of Club 2 saying "have to keep it updated". The Committee Member of Club 2 found the club website "very easy".

The Framework

Table 45 shows the summarised comments from the interviewees. Knowledge was gained through the Association and seeing other Cricket websites. The comments relating to *relative advantage* suggested that the clubs viewed a website to be a good vehicle to convey information to their players and members. The comments regarding *compatibility* suggested that the online statistics program had a website feature, so the match results and the players statistics could be shown in one space. The Webmaster of Club 2 tried the Club Website before it was adopted (*trialability*). A representative from each club *observed* it by viewing other websites from different clubs. The Organisation influenced the decision to adopt for their sponsors and players and no interviewee was involved. The organisation setup the club website with feedback from the players and through the club's Webmaster. The Webmaster implemented the website at Club 2. The comments in the Confirmation stage centred around the opinion that it made the process of disseminating information to players faster, easier, and also promoted the club. However, there were comments about how the innovation must be administered correctly for it to be successful.

Table 45 - Revised Framework with the Home Countries Premier Cricket League Division 2 East Results for Club Website

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	+Found out via Association				
Organisation	[redacted]	+Relative Advantage	+Club Committee Made the Decision	+++Webmaster managers it +Upload results for the members ^Implemented 3 website, only uses one now ^Having to keep it up-to-date	+Great Communication for Players +Found New Players for the Club ^Must be handled Properly
Individual	++Found out via seeing them on the Internet	+++Relative Advantage +Compatibility +Trialability ++Observability	+Club Chairman made Decision	+++ Indirectly involved in Implementation ^Training Needed +More Responsibility +Housed forms and Club Information +Player Database +Communication Tool	++Team Management Easier ++Communication tool ^Must be updated +Time Saving +Ease of Use
Other					

Association or Third Party Website

This Association's website had been adopted by half of the clubs, who were also in the Confirmation stage. Not all of the clubs (83%) surveyed actually knew about the website. The researcher believes the Association needed to be more proactive in promoting the website. The most common users of the

innovation were the Secretaries with 83% and, then the President, the Committee and the Players Group. The researcher considers that the Secretaries being the most common user of little surprise, as they were the link between the Association and the club and must kept up-to-date with the information the Association was conveying. Figure 34 shows the results of the survey.

Stages of Adoption					**Confirmation Stage**						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Assoc	83%	66%	50%	50%	50%	16%	0%	83%	50%	50%	50%

Figure 34 - I-D Mapping from the Surveys and who uses it for Association Website

The interviewees at Club 1 found out (Knowledge stage) about using the Association's website through someone at their club. This was because the website was already in place before they were at their appointed positions within the club and part of their handover from the previous Secretary. The Committee Member at Club 2 actually found out about the website through an email from the Association. Overall, there were a number of methods knowledge about the innovation was diffused. Generally, knowledge of the innovation was found out either through the Association or as part of a handover from club delegate to club delegate (organisational level).

In the Persuasion stage, the *relative advantage* of this innovation, Club 1 perceived it as a great communication tool, where they could access information about the association, such as Cricket rules. The previous system of sending out paperwork through the mail had some major limitations. For example the inability to make changes to the fixture when team or club withdrew. If this was to happen, the whole mailout would need to be resent. As was the common theme across all the associations interviewed, neither of the Clubs had a chance to *trial* Association's website before it went live. The general opinion of this innovation was a positive one, as the interviewees could see how this new system would be an improvement on the previous practices.

The Association made the decision to adopt the innovation without consulting the clubs beforehand. None of the Club's representatives were involved in the decision to adopt this website. However, the Secretary of Club 1 suggested the Association made the decision to adopt. The researcher sees no problem with this lack of consultation, as having this website would benefit all clubs.

Once again, these two Clubs were not involved in the implementation of this website; this was carried out by the Association. The interviewees from Club 1 did not find it difficult to use, and used the website to access information. Club 2 did not find it difficult to use either; however, they used it to gain information from the Association. This innovation seemed to be a success, with all of the interviewees verbalising how easy to use the website was.

All of the clubs interviewed intended to continue to use the website into the future and all were happy with the amount of information that it conveyed. The Secretary of Club 1 could not imagine how this amount of information would be distributed any other way except via a website. As this Secretary was aged 27, this might show how the next generation think in regards of the delivery of vast amounts of information that was subject to change without much notice, like a fixture. The Committee Member at Club 2 also reminisced about the days where "everything and I mean everything, was sent via (paper) mail". The Club Chairman added to this as he could still remember receiving the newsletters and fixtures through paper mail, commenting that "it's more up to date information now".

The Framework

Table 46 shows a summary of the comments from the interviews. The knowledge about this innovation came from the Association and from someone from within the interviewee's club. The comment relating to *relative advantage* suggested that it would be a place to find out about information. None of the interviewees had trouble with the *complexity* of the website, nor had a chance to *trial* it. The Association made the decision to adopt, and setup the club website to communicate with the clubs, The comments in the Confirmation stage were about how the association's website was a communication tool and provides information access. The comments showed the procedure before the website was adopted would have been to send everything out to the clubs and if there was a change (such as to the fixture), this information would have had to be sent the mail out again.

Table 46 - Revised Framework with the Home Countries Premier Cricket League Division 2 East Results for Association Website

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	+Found out via Association		^Association Made Decision		+Better when Compared to Paper Mail Outs
Organisation					
Individual	++Found out via Someone at the Club	+Relative Advantage ^^^^Trialability		++++Ease of Use ++Used for Results and Information	+Communication Tool +Information Access +The information was up to date
Other					

Online Statistics

For the first time, this Association had ranked second in the percentage of surveyed clubs that were in the Confirmation stage for this innovation. This Association had 75% clubs in this stage, compared with the North Metro association on 95%, the Auckland association on 71% and the Colac Association finishing on 17%. This researcher would assume that this Internet application would be an "all in, or none in" prospect and for all intents and purposes, three of the Associations have been. Generally if the Association implements this innovation, clubs that fail to participate were fined by the Association. However, experience at the Auckland Association (on 71%) and this one (on 75%) showed that not all of the clubs have adopted it. One of the reasons for this might be that the person who filled in the survey might not have been aware that the club was using it. The Auckland example showed that one club did not know the national online system existed, as they were not mandated by their Association to use it. Out of the users of this innovation for this Association that were in the Confirmation stage, the most common were the Secretaries on 77%, next followed by the Coaches and the Committee Members on 66%. Figure 35 shows the results of the survey.

Stages of Adoption					Confirmation Stage						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Stats	100%	91%	75%	75%	44%	44%	55%	77%	66%	66%	55%

Figure 35 - I-D Mapping from the Surveys and who uses it for Online Statistics

The clubs that were interviewed both said that they gained knowledge about using the Online Statistics program through the Club Development Manager at the Association. The Association made it clear to Club 2 that they "want everyone to use it".

In the Persuasion stage, neither of the two clubs that were interviewed had problems with the *complexity* of the application, with Club 1 saying that "it was not difficult for each of the interviewees to use and understand". Only the Secretary of Club 1 had the chance to *trial* it before the start of the season and this was through the training that was provided. The other interviewees did not have a chance to *trial* it, or see it in *operation* before the season started. Overall, the interviewees formed a positive view of the innovation. Having training provided by the Association helped to form this view, and help lower any uncertainties about the program.

Like the Association website application, the people who were interviewed were not involved in the decision to adopt this application. The Secretary of Club 1 even went as far to say "it was forced upon us".

The Online Statistics application was a national governing body system, hence none of the clubs were involved in the implementation of this application. There were two phases this application would have gone through, firstly the part of actually putting the software online (undertaken by the national governing body) and the next would have been inputting the Association data, like fixtures and team information (undertaken by the Association at the start of the season). The Committee Member of Club 2 indicated that as all of the players were registered with the website, there was an area for them to keep notes (secure online database) on them, such as working with children approvals, coaching courses, etc. All of this information was online and could be accessed anywhere The Secretary of Club 1 commented that the before this online statistical program was adopted, all of their players statistics were kept on "Excel spreadsheets and no one got to see them, except for the end of the year". Everyone can access them online. The Club Chairman of Club 1 said that this "gives you instant access to the statistics and players can see if they are doing well, compared summarising scorebooks". The Committee Member of Club 2 said that "this is a change in how they used to report scores to the Association after the game. Previously someone would phone the Association and tell them the match results. This particular Association was not interested in the player's statistics. They believed its was the club's duty to keep a record of them". This innovation had replaced the need to 'phone in the scores' and for the clubs to keep all of the player's statistics on standalone Excel spreadsheets. To this point, all of the clubs had no choice to use it after the association decided to adopt it.

In the Confirmation stage, Club 1 commented that they were forced to use this application by the Association, as the Secretary of Club 1 would testify to. However, not withstanding this, it had received some positive feedback, with the Secretary of Club 1 adding that it made thing "much easier" and the Club Chairman of Club 1 saying that "it gives me access to match results and players statistics in an instant".

The Framework

Table 47 shows the summarised comments from the interviews placed within the research framework. The knowledge of the innovation was from the Association. The comment relating to *relative advantage* was that you could have a player database online and be able to check the scores in a timely manner. The comments on *complexity* showed that none of the interviewees had difficulty with the application. The interviewees did not *observe* it before it was implemented. The Association made the decision to adopt and the national governing body setup the online system. The interviewees commented that there was no need to keep the statistics on standalone spreadsheets and it would have

a better system of entering the match results and player's statistics. The comments in the Confirmation stage were how they were made to use it by the Association, however they commented about the ease of use and instant access to player statistics.

Table 47 - Revised Framework with the Home Countries Premier Cricket League Division 2 East Results for Online Statistics

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	++++Found out via Association		^Forced upon by Association	^^^^Forced upon by Association +Statistics were Online	^Made to by Association
Organisation					
Individual		+Relative Advantage ++++Complexity ++^^Trialability ^^^Observability		+Instant access to results ^New Duty as Vice Captain to Input the Scores Online +Do not need to use Excel Spreadsheets +Ease of Access to Results +Better way to report scores to Association	+Ease of Use +Instant access to results
Other					

Reflections for Next Round of Interviews

This was the last round of data collection for cricket. Nevertheless, there were some important lessons that could be learnt about booking and conducting interviews overseas and also having surveys administered on your behalf. As England is on the other side of the globe (compared to Australia), there were numerous 3am phone calls to club members to arrange interviews and to the members of the Association. The main problem with the club delegates was that really telling them that you were flying across the globe to see them and cancelling the interview at the last minute was very inconvenient. However, this would mean having to arrange a last minute interview with someone else when you were over there. With the surveys, it was hard work trying to have the Club Development person at the association return them.

8.5 Summary

This chapter was used to document findings using the revised framework and this was completed with three Associations, two in Victoria and one in England. This framework was accurate with the modifications added to from the previous chapter. The following chapter will discuss the findings of Hockey and Soccer.

9 Chapter Nine – Round Three of Data Collection within Hockey and Soccer Clubs

9.1 Introduction

This chapter provides the data collection from the 'other sports'; Christchurch Hockey Association and the Geelong Football Association.

9.2 Christchurch Hockey Association

The Christchurch Hockey Association is based in Canterbury, New Zealand. Christchurch has a population of almost 350,000 people. This was a very large Association with 23 senior divisions (includes men and women), five youth division and 14 junior divisions (includes boys and girls). There are 20 clubs in the Association and games of hockey are played between two teams, with each game lasting about 70 minutes. On a typical Saturday the association can play three junior matches and five senior matches on one pitch (field).

The researcher flew to Christchurch for a conference and whist there collected the data for this case. This was the first time a sport other than cricket was investigated and the first time the differences (if any) between a complex scoring sport, like cricket and simpler scoring sports were compared.

9.2.1 Data Collection

This was the fifth Association where data was collected and the second time in New Zealand. After a brief phone conversion with the Association President, consent was given to use this Association. The interviews were conducted when the researcher was in Christchurch and the surveys were conducted over the phone. The researcher was given a list of Club contacts from the Association President and telephoned the club representatives when he returned to Australia. This is because there were no delegate meetings being held at that time.

Surveys

One of the most interesting developments that came out of the surveys was when the researcher was speaking to one of the club secretaries. She commented that her club's administration was outsourced to a private company. This company runs the administration for several sporting clubs. The duties of the company included negotiating with the local council, setting up and maintaining a professional looking website and operating the accounting side of the club. The business model of the company was to rent out their services to clubs. The more clubs they had the cheaper those services would become for the company owing to economies of scale. So far, this is the only company the researcher had encountered that provided this service. Communications to the clubs are electronic, rather than through a phone call or face to face.

The average age of the clubs surveyed was 55 years with the oldest being one hundred years old and the youngest only being four years. The youngest club was made up of two clubs that merged four years earlier. The gender breakdown of the clubs' survey respondents were seven males to four females. On average, each club has 12 senior teams and six junior teams. Figure 36 provides a summary of the findings from the surveys.

Stages of Adoption					**Confirmation Stage**						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Email	100%	100%	100%	100%	63%	45%	54%	90%	36%	81%	0%
C W	100%	54%	46%	46%	100%	100%	100%	100%	100%	100%	100%
Assoc	91%	91%	82%	82%	55%	22%	0%	88%	33%	77%	33%
Stats	82%	82%	54%	54%	83%	66%	66%	83%	33%	100%	83%

Figure 36 - I-D Mapping from the Surveys and who uses each Application

The results from the surveys are discussed below.

Email

All of the 11 clubs that were surveyed used email and were in the Confirmation stage, with all clubs continuing to use it into the future. The members nominated as users were Secretaries, Coaches and Presidents (63%).

Club Website

All of the respondents had heard about the possibility of having a Club website. However, these figures dramatically fell away to 54% of clubs in the Persuasion stage. The interviewees suggested that there were a number of school and college clubs that did not have a website, but did, 'piggy back' off their school's website. This 'piggy backing' occurred generally when a school or college advertised their sports program and mentioned their hockey team. Only 46% of the clubs surveyed had implemented a club website and the same clubs were in the Confirmation stage. All of the Administration and Players used the club Website. If the schools and colleges that were 'piggy backing' on their schools are removed from the data (five schools and colleges out of the 11 surveys), five of the six responding clubs (83%) are in the Confirmation stage.

Association or Third Party Website

Some 91% of the clubs surveyed were in the Knowledge stage. This figure only decreased slightly to 82% in the Confirmation stage. The three most frequent users of this application from the clubs in the Confirmation stage were the Secretaries, Coaches and Presidents. However, no Treasurers used the Association's Website. As mentioned previously, generally Treasurers only handle the financial issues of the club and have no responsibility at an Association level – therefore do not need to use an Association's website.

Online Statistics

This association handled online statistics in a different manner to the cricket associations. The clubs themselves did not input the match results and players statistics into the system. Every game of Hockey has a umpire and due to the few statistics involved, the umpire enters the match results and goal scorers directly into *Sporting Pulse*. Sporting Pulse is a third party online administration system that Associations use to house their fixtures, ladders and players statistics. Their software is transferable across many sports that have very similar scoring schemes to that of hockey (for example, Basketball, Netball and Soccer). This company is a direct competitor to Australia's Results Vaults. Almost 81% of clubs were in the Knowledge stage, however, this number dropped to 54% in the Confirmation stage. The most common users of this application, as nominated by the clubs in the Confirmation stage, were the Coaches, Presidents, Secretaries and Players.

Summary of the Surveys

This Association was quite advanced in relation to the uptake of email and the Association's website. On the other hand, it had significantly lower adoption level of club websites and online statistics than the cricket associations (with the exception of Colac).

Figure 37 illustrates how long each of the clubs had been in the Confirmation stage. Only two of the clubs surveyed have adopted all of the Internet applications. The average number of years each application had been adopted was a little more than five and a half years. This figure was compared to Auckland on a little more than seven and a half years, North Metro on almost five years, Colac on a little more than two and a half years and Home Countries Premier Cricket League on more than four years.

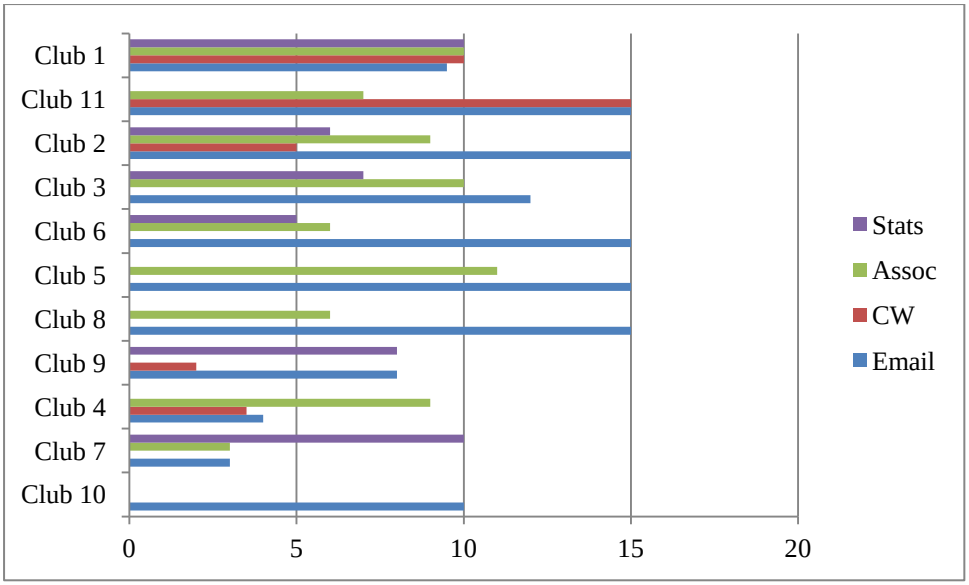


Figure 37 - The Amount of Years Each Club has used an Application

Interviews

After interviewing five members from three different hockey clubs, some interesting findings emerged. One of the most interesting facts from the "other" sports was that the umpires entered the results online. This was a vastly different situation to cricket, where clubs were required to enter in the match results and player statistics. This association processed the match scores and players' statistics differently to that of the cricket associations. Unlike local cricket, all matches have an umpire. As a sport, hockey does not have many official statistics, the most used being match results, goal scorers and penalties. The process of entering these details online is the duty of the umpires. Also, another difference was that the Association's website is integrated with the match results and fixtures and ladders (through Sporting Pulse). This level of integration was not attained in cricket associations at that time. The researcher believes that as Sporting Pulse had been around much longer than the relatively new cricket systems, the Association had much longer to integrate its website with the Sporting Pulse website.

Club 1

There were two club representatives interviewed at Club One, the President and the Secretary. This was a very large club, according to the Secretary, the "biggest in New Zealand with over 500 members". Due to the size of the club, the researcher thought it would be interesting to see how they would deal with the challenges that arise with such a big club. This club was about 75 years old. This Club also used a statistical program called Game Breaker to analyse game statistics. This software is a digital video analysis tool, which was originally developed for Hockey. The Secretary was aged in her 50s and worked as an interior designer. The President was a painter, who was 52 years of age. Both of the interviewees were familiar with the list of typical computer terms. These technology terms, such as 'the Internet', 'standard desktop applications' (like MS Office), 'blogs', 'networking' and 'gigabyte', were used to see how familiar the interviewees were with standard computer technology.

Email

The President said he was involved in the setup of email with the club in 1995, "it started with him and another guy at the club (who was in ICT) swapping emails with each other and it grew from there". However, the Secretary admitted to having set up email in 2000. This might have been a formalisation of using email to send information to players. It took five years from sending emails

from one person to another to setting up a registry. The Secretary said email was used by the Committee, Coaches, Managers and with direct communication with the CEO of the Hockey Association. Both of them used email to "pass information along" and much of the President and Secretary's time was dedicated to disseminating information to their members, coaches and managers. The President first used it at work and the Secretary used email with her children. Both of the respondents outlined the major benefit of email as the speed of communication. The Secretary also added that if she sent out an email, it "would be actioned on the same day, rather than waiting a few days for snail mail". However, the Secretary did mention that before email, there used to be a "big mail out". This mail out would become expensive as each of the letters would need to be printed, folded, put into an envelope and have a stamp put on it. Email has changed the way both of them do their respective duties. The Secretary and the President had to mail out the minutes from club meetings and newsletters, the Secretary added that once you "send it (the email), it's done", before there was the process having a mass mail out. Both of them also remarked that there was much less phone calls. With understanding how to use the technology, the President said that "it was hard, as it was telnet (this is a command driven email program that was the standard in the early to mid 1990s)". However, the Secretary found it much easier as email programs had evolved to be much more user friendly, commenting that "once she picked it up, it was easy". Both of them had a chance to try it out and to see it in operation before they used it in their club. The President used it at work and the Secretary through personal use. Some of the factors that led to the decision to adopt email in the club were the ease of use, ability to contact people quickly and saving time. Both of them will continue to use email into the future with the ease of use and having it save time.

Club Website

Neither the President, nor the Secretary, were involved in setting up the club website. Both said the club ICT professional set up it. Since then, the ICT professional had moved overseas, however he still maintained the website. The website was used to store historical information, with the President adding that the website was the "profile of the club" and the first point for contact for members and prospective members. The President said the ICT professional at the club told him about the club having a Club Website and the Secretary found out about it through a committee meeting. Both of them outlined different benefits of having a website. The President said that "you can have a wealth of information on it (Club Website). Before the website, there was a lot of manual filing and because of that, a lot (of information) got lost". Whereas, the Secretary said the benefit of a Club Website was as a promotional tool, she added that "lots of people contacted them from overseas (who were about to move to Christchurch) about joining the club". The President commented that "it (the club's website) had not had as much of an influence (on his role at the club), the operational tasks have stayed the same". Whereas for the Secretary, the website was introduced before she was there and she had not known any different. It was difficult for the President to understand and use, that is why "I have kept the IT (ICT) guy on", whereas the Secretary had no such problems. The President had a chance to trial it before his club adopted it, he had a slight association with another club and asked them the "do's and don'ts" of having and website. The President also observed the innovation in use before hand, he went to about six Hockey websites to "get a feel for it", one of them was Australian and one was German. The Secretary noted that the website was implemented before she secretary, therefore did not trial it, nor see it in operation before it went 'live'. The President said that some of the decisions that led to them adopting a club website, where its ease of record keeping, access to the wider members and it helped the continual need for transparency at the club. Although the club's website was there before she was, the Secretary saw the website as "just a promotional tool for the club". Both interviewees will keep the club website in the future as it improved the efficiency of information

dissemination. However, the President did note that it was good for the club profile, particularly on the international stage.

Association or Third Party Website

Neither of the interviewees were involved in the setup of the Association's website. However, the President did say that the website was used by different people for different things. For example, the members would use it for draws (fixtures) and ladders, whereas coaches would use it for instruction for practice training drills. Both of them used the Association's website for ladders, draws, representative sides and club contact information. The Secretary used it for a calendar of important events for the Association, like delegate's meeting. Whereas, the President said he used it for historical information. The President found out about the Association's website when it was promoted at the Association's annual competition meeting, whereas the Secretary said it was always there and found out about it through someone at the club's committee. The benefits of the website are, according to the Secretary, that the "information is there, you don't need to call up the Association all the time". According to the President, "there is an easy transfer of information and before the website the draws were written in a booklet and then mailed out and you didn't know the standing (ladders) before they released them almost at the end of the season". The website did change the way the President operated, particularly with the coaching side. He said that "there is more coaching stuff coming down from the national side". Whereas, the Secretary was not in her current role before the website was there and therefore knows no different. Both of them found the website easy to use and self-explanatory. The President mentioned that once he "was urged (told) that I could not break it, I was fine". Neither of them had a chance to try it out first, or see it in operation before it was in use. Again, neither of them were involved in the decision to adopted the website, as the Association made that decision. Both of them will continue to use it in the future, as the President added it is a "transporter of information, like standing and draws".

Dealing with Game Statistics

This club used the online statistical package, which was in use throughout this Association. Again, neither of the two interviewees were involved in the setup of this program. As with the Association's website (which is integrated with the online statistic package), the President said it was "great having everything at your fingertips". The Secretary agreed with this comment that "having the fixtures and standings (ladders) online makes things so much easier". The President found out about the innovation at an Association meeting, adding that "it was launched about the same time as the Association website". The Secretary also added that she found out about the online statistical package during the handover process from the previous secretary. The benefit of the online statistical package was that it had made team management much easier. The President said that "before the website, we had to wait until the end of the season for the standings (ladders) to know who we played in the finals". The Secretary on the other hand was not around before the statistical package and said that "I can't imagine having to wait till the end of the season for the standings". Neither of them had a problem with the use of this program. However, the researcher believes that the interviewees are viewing the end result of the system. These included the fixtures, standing, the match day reports and the individual statistics like goals. The researcher considered that if they had to undertake inputting the results for so many teams, their perspective might be different on the matter. Neither of them had a chance to trial it, nor observe it in operation before it was adopted. They will continue to use it into the future. As the President said "it is a great tool and it gives you up-to-date standing and fixtures".

Club 2

Club 2 was a relatively small club with six teams, four of them being junior teams. The Treasurer interviewed was aged in her 40s and was a "stay at home mum" with two teenage daughters. The club had fewer teams than it did a few years earlier after losing several senior teams. Due to the small size of this club, they had only implemented some of the Internet applications.

Email

The Treasurer was not involved in the setup of email. However, the club did have an email address. One year the Association started sending out emails, so they used email more often. She added that she did not know of the club sending emails to each other before then. She used email to communicate with the Association and was frustrated with the amount of email the Association sent out, adding that there "seemed to be 100s of emails a week". The Treasurer found out about the use of email through other hockey clubs from the Association, however she did have a personal account first. Her husband used email for work and her daughters used it all the time. Some of the benefits email had given her are, that it is very quick and because it is typed, it easy to read particularly with numbers. The Treasurer indicated email had not changed the way she operated at the club. Before email, "the coach would write a list for parents (what to bring to the games, fixtures, etc) and hand them to the kids, some would lose it, now he emails the parents directly and tells them. This is the only process it has really changed". She did not have any difficulty understanding how to use it. She had tried it out before through emailing her friends and family overseas. However, she did not have a chance to see it in operation before as all of the administration jobs went through the Secretary, now they all go through her. The Treasurer was not involved in the decision to adopt email within the club. One year all of the communications from the Association came through the post, the next year they were all email. This changed happened about five years ago. In the future, she will continue to use email, as it is "much better and quicker. It's more cost efficient and it saves on storage space".

Club Website

This club does not have a website; however they do have a listing on the Rangiora Regional Portal. The committee discussed having a website, but decided not to. This meant they had passed through the Knowledge, Persuasion and Decision stages.

Association or Third Party Website

This club does not used the Associations website, the Treasurer believes that everything comes through email and therefore does not need to check the website. There are so many emails from the Association that "it is getting on my nerves a bit".

Dealing with Game Statistics

This club only uses the online statistical part of the Association's website to examine the fixtures and the standings (ladders) throughout the season. The Treasurer said that having these details online makes "things much easier in terms of planning". She found out about website through the Association.

Club 3

Club 3 has ten senior teams, five male and five female teams. They also had eight junior teams. The two people interviewed were the President and the Secretary. The President was around 30 years of age and worked in a retail store. The Secretary on the other hand was aged in his 60s and a supervisor at a research centre in Christchurch. Both of them were familiar with the Internet terms. Unlike the Club 2, this club had implemented all of the available Internet tools.

Email

The Secretary said he was the one who pushed email adoption within the club. Whereas, the President recalled that it "just sort of happened through sending personal emails". Although there are two different stories, both are true, with the Secretary starting the process with sending the emails and the President responding to them. Both of them use the innovation for communication purposes. The President used it for contact with the committee and the club members. The Secretary used it for "basically everything, information to the members, giving communication to the members and publishing the meeting minutes". The Secretary found out about using email through work and personal use, as did the President, he noted that "if we didn't have email, we'd be stuffed!". The benefits that both of them said email brought was better contact with members, cost efficient, quick and instant communication, there are no more mail outs and information can be sent to as many people as was needed. It has changed the way they perform their tasks with the Secretary not having to do mail outs anymore and the President able to reach the members better. It was not difficult for them to understand it, as both of them use it for either work, or personal use. The Secretary did have a chance to try it out before hand, with their website having an email function. Whereas, the President, had already used it for personal use. Some of the factors that were listed which led to the adoption of email in this club were basically cost and the immediacy of sending messages. Both of the interviewees would keep using email into the future. However, the Secretary went on to say "that the hardest part of it is keeping the mailing list up to date. Generally when he sends an email, you usually receive about 15-20 emails bounce back (they bounce back as the email address was incorrect and or out of date)."

Club Website

The club website was developed about ten years ago and before the incumbent President and Secretary were that their posts. Over time they have had to change service providers and due to that, it has changed the look of the website. The last service provider change occurred because of the company going out of business and took the clubs and the entire Association's website with them. At the moment, they are looking for another Internet Service Provider (ISP). The Secretary assumed most people in the club used the website site, however he used it the most as he is in charge of updating the website. The club website was used for team list, to provide information to members, contact information and general information about the club. Neither of them can remember how they found out about having a website. However, the main reason they use it was that other Hockey clubs have them and they are "keeping up with the times". The Secretary said the benefits of having a website were better communication and once you put it on the website everyone can see it. The President on the other hand saw it more as a central point for members to find information about the club and for other people to find them and become new members. This website had not changed the way they do their duties at the club (because it was there before they arrived). However, the President said that it did not change the way they did things (the core tasks), just the way the members access information. The President did not find it hard to use, as the Secretary was the one who was in charge of it. However, the Secretary did find it hard to manage and update in the beginning, but had overcome those issues. With the new website (the now defunct one), the Secretary set up and simple website, after viewed other club's websites and observing they had implemented. They will continue to use it in the future, as it had become more advanced and the committee has seen the advantages of it.

Association or Third Party Website

Neither of the two club representatives were involved in the setting up of the Association's website. Both of them appreciated the website for similar reasons, such as checking standing (ladders) and the

fixtures. However, the Secretary also used it to gain information from the Association and gain access to the national governing body. Both the Secretary and the President found out about the Association's website through word of mouth from the Association and cited the benefits of the website as a central point for all of the clubs to gain the same information. Neither of them had a chance to try it out, or see it in operation, as the website was there before they arrived. The Secretary will continue to use the Association's website as it gave him information that is tailored to clubs and the President will be "sticking with it and never going back".

Dealing with Game Statistics

As the online statistics website was integrated into the Association's website, the distinction between an online statistics package and the Association's website made it more complicated to separate the two. However both the President and the Secretary were not involved in the setup, this was completed by the Association. The setup of this application was undertaken by Sporting Pulse, however the Association edited it to fit the propose. The interviewees use this innovation to view the fixtures, standings (ladders) and weekly match results. The President found out about the online statistics through the Association, as did the Secretary. The Association's website and the online statistics website are one and the same. They will continue to use it in to the future and the Secretary added, "it makes my job so much easier".

Framework and Results

This section summarises how Christchurch Hockey Association has progressed along the research framework adoption model for each Internet Application.

In the section below, there are two sections for each Internet application. The first section in each of the applications summarises the results of the survey and shows the stages of adoption from Rogers' Innovation-Decision process (2003), as well as the proportion of members in 'administration' roles and 'competition' roles. The second section in each application shows the results of the interviews and how the results have fitted into aspects of the framework. The questions are based on the stages of Rogers' Innovation-Decision Process and show how each aspect of the process either came through the 'Organisational' influence or from an 'Individual'. Each response to a question is classified as being a positive, or a negative, influence to adoption and for continued use.

The researcher has made the distinction between 'negative' and 'positive' with the following guidelines. If the interviewee had a pessimistic experience in one of the stages, however it might have been a positive influence on adoption, the researcher classified this as negative influence. The researcher will be going to use the theory of a 'negative incentive'. According to the Rogers (2003) a Negative Incentive is with,

"Most incentives are positive in that they reward a desired behaviour change (such as adoption of a new idea), but it is also possible to penalise an individual an individual by imposing an unwanted penalty or by withdrawing some desiderata for not adopting an innovation." (Rogers, 2003, p. 237)

Another distinction that needs to be made is Organisational versus Individual influences. The definition that the researcher has used is who the influence has affected. That is whether the actions of the change agent has affected the individual, or the organisation.

Email

This was the first time an Association, other than Cricket, was surveyed. All of the clubs surveyed are in the Confirmation stage of the Innovation-Decision process. The most common user of email within this Association, that were nominated by the clubs in the Confirmation stage, were Secretaries,

followed by Coaches. Out of the Associations with more than 90% of clubs in the Confirmation stage, at least 81% of their Secretaries used email and all the Associations cite Secretaries as their highest email users. A reason for this might be to do with the interaction with the Association and having the Association communicate via email. Figure 38 shows the results of the survey.

Stages of Adoption					**Confirmation Stage**						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Email	100%	100%	100%	100%	63%	45%	54%	90%	36%	81%	0%

Figure 38 - I-D Mapping from the Surveys and the who uses it for Email

From the interviews that were conducted in this Association, only one interviewee found out about email through the Association. The other interviewees found out through individual means, such as work and personal use. The President of Club 3 add that "if we didn't have email, we'd be stuffed".

The eventual decision to adopt email at a local club will be made using the influences that are in the Persuasion Stage. The *relative advantage* of email was the effect that it had on the club by having to change the way communications were conducted with members, from mailouts to email. The President and the Secretary of this club also said that cost, was also a major factor. The Secretary of Club 3 also agreed with point. However, the other major reason was the speed and ease of use from use of email. There were no comments for compatibility, however, the Treasurer of Club 2 had no difficulty understanding it. All of the interviewees *trialled* email through personal use before implementing it at the club. The Treasurer found out about email from the Association, however then *trialled* it through personal use. Only the interviewees at Club 1 mentioned they *observed* email through their personal use, however the Treasurer of Club 2 did not see it in operation at the club, as the email all used to go through the Secretary first. Overall, there was a positive attitude formed about email. The benefits were generally seen through work or personal use, and these could be transferred to the Club.

In the Decision stage, the Secretary of Club 3 said he was the one who really endorsed email at his club. On the other hand, the Treasurer of Club 2 said that she was not involved in the decision to adopt.

In the Implementation stage, the Secretary and the President of Club 1 agreed that it become a great tool to "pass information" along to their members. This theme was continued by the President of Club 3, who used it to contact the committee. The President of Club 1 commented that their ICT person was the person who implemented this innovation, however email had a difficult interface called of Telnet. The President of Club 3 said it happened through "just sending emails". The interviewees of Club 3 also added that after implementing email, they did not have to have mailouts to their members. The overall theme of this stage was that email saved time and made communication easier.

In regards to the Confirmation stage, all of the interviewees will continue to use email into the future. The Treasurer of Club 2 was getting "a little frustrated" with the amount of emails the Association was sending her. She said there seemed to be 100s sent every week. The Secretary of Club 3 added that the most difficult part of email was keeping the players email register up-to-date. Also, generally when he sends an email, about 15-20 emails would usually bounce back. Generally, the interviewees found email to be a efficient communication tool. However, one of the major problems they encountered was keeping the player details up to date, and therefore knowing the message went to the player's proper email account.

The Framework

This will be the first trial of the revised research framework with a sport other than Cricket. From the interviews that were conducted (and the surveys), it seems that this Association is rather advanced when it comes to the stages of the adoption model. All of the interviewees use email and will continue to use it into the future.

Table 45 summarises the findings from the interviews and how their statements related to the research framework. Awareness of email came from the Association and through work. The findings relating to *relative advantage* related to how game administration was handled quickly (compared to the previous paper method) the need for paper mail was almost nonexistent, email messages were 'instant' and information can be sent out quickly and to a large audience. The comment on *complexity* was about how the Treasurer of Club 3 had no problem understanding how email worked. In regards to *trialability*, many of the interviewees used email at work before using it at their cricket clubs. The decision to adopt email at Club 3 was made by the Secretary and the Treasurer of Club 2 was not involved in the decision. There were numerous comments that suggested once email was implemented it was much better to communicate information to members within the Club and the Committee. The interviewees found that email was a low cost alternative to paper mail; which also saved time. The comments from the Confirmation stage were about the ease and speed of use of email and how it is the new trend in technology, compared to conventional paper mail. However, there was one comment relating to the amount of email received from the Association, an interviewee commenting that she was a little frustrated as the Association seemed to send out "hundreds of emails a week".

Table 48 - Research Framework with the Christchurch Results for Email

Innovation-decision Influences	**Innovation-Decision Process**				
	Knowledge	**Persuasion**	**Decision**	**Implementation**	**Confirmation**
Institution	+Found out via Association			+Association sent out emails	^Amount of Email from Association
Organisation		+Relative Advantage		+++++Information Diffusion ++Less phone calls	
Individual	++++Found out via Personal ++Found out via Work	+++++ ++++Relative Advantage +Complexity +++++Trialability ++^Observability	+Individual made decision to accept	++Sent email within committee +Easier than thought +No mail outs +Contacted members better ^More training needed	++Ease of use ++Saves time +Saves Money +Saves Physical Space ^Updating list
Other					

Club Website

From the results of the survey, all of the clubs know about having a Club Website; however, this number falls away dramatically with less than half of the clubs in the Confirmation stage. Of the six clubs that have not implemented a website, only one of the clubs had made the decision to adopt one and this was made by the President. Nevertheless, if the schools and colleges that are 'piggy backing'

on their schools are removed from the data (five schools and colleges out of the 11 surveys), there remained five of the six clubs (83%) in the Confirmation stage. However, only having a little more than a quarter of the clubs represented might not be enough to make any strong recommendations. Figure 39 shows the results of the survey.

Stages of Adoption					**Confirmation Stage**						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
C W	100%	54%	46%	46%	100%	100%	100%	100%	100%	100%	100%

Figure 39 - I-D Mapping from the Surveys and who uses it for Club Website Application

In the Knowledge Stage, Club 1 had the Club's ICT person tell the President about having a website for the club. Then the President told the rest of the club during a committee meeting. The President and Secretary at Club 3 could not remember how they found out about their club's website. A point to remember was that the website was there before the incumbent President and Secretary were in their positions.

The Persuasion stage of the Innovation-Decision Process (Rogers, 2003) builds an argument to whether the decision to adopt will be made in favour, or not, of an innovation. The *relative advantage* of having a Club Website, according to the interviewees, were the ease of record keeping, the access it gave to the members and the faced the club wanted to "keep up with the times". The Secretary of Club 1 and the President of Club 3 did not have any problems with the innovation, however the President of Club 1 did and "kept the IT (ICT) guy on". The researcher believes that if the ICT person from the club was going to be the website administrator from the other side of the world, the club should keep him on. The President of Club 1 had a chance to *trial* the Club Website. The President of Club 1 and the Secretary of Club 3 both *observed* other club websites before these were built. Overall, there was a positive opinion formed for this innovation, and all of the clubs interviewed will implement it.

In relation to the Decision Stage, the only comment about this innovation was from the Treasurer of Club 2, who said that the committee had a meeting about whether or not to adopt a website and in the end they decided not to. This Club was quite small in size with only a few teams. They must have thought it would be easier to spread information via word of mouth.

During and after the implementation of this innovation, there were a number of themes that materialised. Neither of the interviewees of Club 1 were involved in the setup of the Club Website, this was completed by their ICT person at the Club before he moved overseas. The Treasurer of Club 2 comment that the club did not have a website, which was decided upon at a Committee meeting. The President of Club 3 committed that they did have a website (along with the Association), until the company hosting the website collapsed. The President of Club 1 said that the website could house a "wealth of information". Whereas, the Secretary of the same club added that it is a promotional tool, where prospective members can use it as a first port of call. The interviewees at Club 3 said that the Club Website was implemented before they were given their positions within the Club. The Secretary said he found it hard in the beginning to update the website. The clubs that had implemented a website viewed it as a central place to store information and communicate to players. However, it was noted was there that a high degree of technical knowledge that had to be sourced when developing the website.

In regards, to the Confirmation stage, the President of Club 1 commented that he believed the website was "good for the club profile particularly on the international stage". The President of Club 3 said

that it provided a central point for members and prospective members to access information about the club. The Clubs that were in Confirmation stage of this innovation, commented that they will continue to use the club website into the future. Club 1 added that they would continue to use it as it provided them with efficient gains, with the Secretary said that "once you put it on the website everyone can see it". Club 3 said that the Club Committee supports the innovation and therefore will continue to use it.

The Framework

Table 49 shows the research framework and summarises the comments from the interviews. The major sources of knowledge was that the interviewees found out about it through the club's ICT person. The *relative advantage* of having a Club Website, according to the interviewees, was the ease of record keeping, the access to information it provided to members and the club wanted to "keep up with the times". The Secretary of Club 1 and the President of Club 3 did not have any problems understanding the innovation, however the President of Club 1 did not understand it and "kept the IT guy on it (the website)". The President of Club 1 had a chance to *trial* the Club Website. The President of Club 1 and the Secretary of Club 3, both *observed* other club websites before their own sites were built. For one of the clubs, the Committee voted against having a Club website and for another, their Internet Service Provider (ISP) went bankrupt. The President of Club 1 said the website could house a wealth of information and give them worldwide access to players. In the Confirmation stage, the two clubs that had a club website will continue to use it into the future. Adding to this, the comments for this innovation were that it lifted the club profile and provided a central location to store information for their members and committee. The interviewees found the innovation provided efficiency gains and increased communication with their members.

Table 49 - Research Framework with the Christchurch Results for Club Website

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution					
Organisation	[redacted]	++Relative Advantage	^Committee decided against it	^ISP went broke	+Club Profile +Central Access ++Committee has seen advantages
Individual	+Found out via ICT Person at Club +Found out via Committee Member	++^Complexity +^Trialability ++^Observability		+Wealth of information +Worldwide access +Core tasks remain ^More Training	++Efficient Gains +Communication with Members
Other					

Association or Third Party Website

From the clubs that were surveyed, nine of the 11 had used the Association's website. Of the two clubs that were not using it, this was the President's decision to do so and the other club had not heard about the website. The club that had heard about the website (Club 2 in the interviews) had chosen not to use it, as "everything comes through email and therefore does not need to check the website". Of

the clubs that were using the website, each of them will continue to use it into the future. The clubs that are in the Confirmation stage have nominated their Secretaries (on 88%) and their Coaches (on 77%). Based on the interviews, these figures hardly seem surprising, as the Secretaries are the link between the club and the Association and there seems to be a surprisingly large amount of coaching material on this Association's website. The average length of time this innovation had been in use at this Association was almost 8 years (from 2001). Figure 40 shows the results of the survey.

Stages of Adoption					**Confirmation Stage**						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Assoc	91%	91%	82%	82%	55%	22%	0%	88%	33%	77%	33%

Figure 40 - I-D Mapping from the Surveys and who uses it for Association website

In the Knowledge stage, the themes of the interviews suggested that the President of Club 1 found out about the Association's website through the Association's Annual Competition Meeting. The Secretary of Club 1 found out through their club's committee. Both of the interviewees from Club 3 found out via the Association.

In relation to the Persuasion Stage, the interviewees said that the *relative advantage* of the association's website was that all of the information was central and therefore direct communication, such as phone calls to the Association were kept to a minimum. Neither the Presidents, nor the Secretary of Club 1 had a problem with the concept of the website. The President commenting that "once I was urged (told) I could not break it, I was fine". The interviewees from Club 1 and Club 3 did not have a chance to trial, nor observe the innovation before it was implemented. Overall, the club representatives formed a positive option of the website.

The President of Club 1 said the Association made the decision to implement the innovation. The researcher believes for this innovation, this should be the appropriate course of action. The two interviewees from Club 1 were not involved in the decision to adopt the Association's Website. Adding to this, the Treasurer of Club 2 said that she believes that everything comes through email and therefore does not need to check the website. Much like the other associations, the association made the decision to implement this innovation.

In regards to the Implementation stage, it was apparent that the Association were behind the implementation of this innovation. As with the results from other Associations, this seemed to be the trend. .

After this innovation was implemented, the interviewees at Club 1 and Club 3 said they would continue to use it into the future. The President of Club 1 said that it was used by their members to access ladders and draws. The researcher believed this area was more in the realm of the Online Statistics innovation. This had been one of the main differences between the Cricket Association and the 'other' sports. It seemed that the Association Website and the Online Statistics were so closely integrated, that they are almost the same entity.

The Framework

Table 50 shows the research framework which has the summarised comments from the interviewees. The major source of knowledge was the Association. One interviewee said they found out via someone at their club. The *relative advantage* of the Association's Website was that essentially all of the information was central and therefore personal communication, such as telephone calls to the Association were kept to a minimum. Neither the President, nor the Secretary of Club 1 had difficulty

implementing the website. The President commented that "once I was urged (told) I could not break it, I was fine (to use it)". The interviewees from Club 1 and Club 3 did not have a chance to *trial*, nor *observe* the innovation before it was implemented. The Association made the decision to adopt the website and the Association set up the website. The comments in the Confirmation stage were about how the information is now stored in a central location (the website) which is also easy to access.

Table 50 - Research Framework with the Christchurch Results for Association Website

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	+++Found out via Association		^Association made decision		
Organisation					+Members use it
Individual	+Found out via Committee member	++++Relative Advantage +++Complexity ^^^^Trialability ^^^^Observability	^Not Needed		+++Information is Central +++Ease of Information Access ++Continued use
Other					

Dealing with Game Statistics

This innovation highlights the differences between the two types of sports. Where the online statistics package is implemented with Cricket, it is a requirement for the clubs to enter the statistics themselves and therefore most use them. However, with Hockey, due to the low statistical involvement, the umpires enter the match results and player statistics. Therefore the clubs have no requirements (which are imposed by the Association) to use the online statistics other than for information purposes. This was shown in the survey results with only 54% of the clubs in the Confirmation stage. From the Clubs in the Confirmation stage, Coaches, Players, Secretaries and Presidents were the main users. Of the clubs that had not Implemented it (four in total), three clubs are planning to use it with the Secretary involved in the decision at all three clubs. The other club had not even heard about having match results and player's statistics online. Figure 41 shows the results of the survey.

Stages of Adoption					Confirmation Stage						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Stats	82%	82%	54%	54%	83%	66%	66%	83%	33%	100%	83%

Figure 41 - I-D Mapping from the Surveys and who uses it for Online Statistics

In relation to the Knowledge stage, the Presidents of Club 1 and 3, the Treasurer of Club 2 and the Secretary of Club 3, said that they found out about having statistics online through the Association. The President of Club 1 added that "it was launched about the same time as the Association website". The Secretary of Club 1 said she learnt about the innovation through the former club Secretary during the handover of the position. Much like the other sporting associations, the association was the entity which supplied the knowledge about this innovation.

In the Persuasion stage, the clubs found that the *relative advantage* of the Online Statistical package was wide ranging. The Secretary of Club 1 said that team management was easier and the President of Club 1 added that organisation was easy when the match fixtures and standings (ladders) were online.

The President and Secretary of Club 3 agreed with this point. Neither of the interviewees had a problem with the *complexity* of the innovation, however, they did not have a chance to *trial* it, nor *observe* it. Generally, the interviewees formed positive opinions about the benefits this innovation could provide. However, did not have a chance to trial or observe it before it was implemented. This might be because the club users at this association only need to view fixtures, match results and ladders.

As the President of Club 1 said, the decision to adopt was decided upon and implemented by the Association at the same time as the Association's website. This was a common theme between the associations.

As the President of Club 1 said, this was decided upon and implemented by the Association at the same time as the Association's website.

In the Confirmation stage, all of the interviewees will continue to use this innovation into the future, not by choice, as the Association will continue to use it. The main theme to come from the interviews were the ease of access to the fixtures and standing (ladders). The Secretary of Club 1 even commented that she "can't imagine having to wait till the end of the season for the standings".

The Framework

The Knowledge stage of the research framework showed that the Association gave information about it on four occasions and the former Secretary told the new Secretary about the website. The *relative advantage*s of the Online Statistical package were wide ranging. The Secretary of Club 1 said that team management was easier and the President of Club 1 added that organisation is easy when the fixtures and standings (ladders) are online. The President and Secretary of Club 3 agreed with this point. Neither of the interviewees had a problem with the *complexity* of the innovation. However they did not have a chance to *trial* it, or *observe* it. Indirectly, the Association made the Decision to adopt this as they Implemented this innovation along with the Association's website as a single package. There were four comments relating to the Implementation stage and all of those were that the interviewees were not involved. The comments in the Confirmation stage were how the fixtures and standings (ladders) where easier to access as they were online. The comments from the interviews suggest that there are a number of themes that the interviewees followed. Table 51 is the research framework with the influences from the interviews entered into it.

Table 51 - Revised Framework with the Christchurch Results for Online Statistics

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	++++Found out via Association		^Assoc Made Decision		
Organisation		++++Relative Advantage			
Individual	+Found out via former Secretary	++Complexity ^^Trialability ^^Observability		^^^^Not Involved	+++++Access to Info ++Ease of Use +Cannot image it another way +Planning ++Continued Use
Other					

9.2.2 Reflections for the Next Round of Interviews

This round of interviews and survey needed a slightly different approach with relation to collecting the data. The researcher was in Christchurch for a conference and while there conducted the interviews. However, the timing of the conference was during the offseason of Hockey and therefore there was not a scheduled delegates meeting for some time. The researcher decided to administer the surveys to the club delegates via the phone. Although this proved to be quite time consuming, especially when he had to call the same person multiple times to arrange a 'good time' to call. However, it was a small price to pay for such rich data. If need be, the researcher would employ this method again as an alternative method to administrating a survey en masse.

9.3 Geelong Soccer Association

This Soccer Association is located an hour's drive south west of Melbourne and about an hour's drive east of Colac. Geelong is the second largest city in the state of Victoria with around 140,000 people. The Association has 17 clubs, divided into three men's and two women's divisions. These are the main divisions for this Association, whose games are played on weekends. However, this Association also has mid-week and junior competitions, with three divisions playing on Monday night, three divisions playing on a Wednesday night and 16 junior divisions (consisting of male and female divisions). These weekday competitions are more social competitions where each 'club' has only one team and are managed very informally. The main divisions of this Association have little contact with these teams. The junior divisions are divided into age categories, which also include five age divisions that play indoors during the summer (the offseason). There are many teams that compete in this Association. However, due to many of the games not overlapping, players can complete in three or four games a week if they choose to.

9.3.1 Data Collection

This was the last time data was collected for this study. As this Association was relatively close to the researcher's home city of Melbourne, access to this Association was easy. The researcher contacted the President of the Association and asked for the association's assistance with this project.

Surveys

The survey was administered at an Association delegates' meeting in September 2010. The meeting was for the clubs in the main divisions and therefore only 17 clubs were surveyed. The researcher had a chance to administrate it personally and fielded questions from the Association and the Club delegates on the night. Overall, this Association had made use of all of the Internet applications.

The return rate was 100% of the main division clubs. This was again a great response rate and further support for the decision to administrate the survey at a delegates' meeting. The average age of the clubs was 25 years, with the oldest a little over 55 (years and the youngest only 2 years of age. On average, each club had almost three senior sides and a little more than three junior sides. Club Delegates surveyed were 13 male and four female respondents. Figure 42 provides a summary of the findings from the surveys.

Stages of Adoption					**Confirmation Stage**						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Email	100%	94%	88%	88%	100%	66%	94%	100%	80%	40%	46%
C W	100%	70%	58%	52%	100%	90%	90%	100%	90%	90%	90%
Assoc	100%	88%	88%	88%	20%	13%	0%	93%	6%	6%	13%
Stats	100%	70%	64%	64%	46%	46%	46%	100%	46%	46%	46%

Figure 42 - I-D Mapping from the Surveys and who uses each Application

The results from the surveys are discussed further below.

Email

The results of the surveys showed that 88% of the clubs were in the Confirmation stage and 94% of the clubs were in the Persuasions stage. Of the clubs in the Confirmation stage, the clubs nominated that the Secretaries and Presidents were the most frequent users. This was next followed by Treasurers and these three roles generally made up the Executive Committee at the clubs. On average, the innovation had been adopted for a little over six years, with the longest being 15 years and the earliest

being two years. Of the two clubs that had not adopted email, the President made the decision to adopt in one club and the other club had decided not to use it.

Club Website

Only half of the clubs surveyed were in the Confirmation stage for having a Club Website. Of these clubs, the main users of the innovation were secretaires and presidents on 100% and the *rest of the delegates*. There were a number of surveys that listed 'all of the delegates' as users of the Club Website. The average age of the Club Websites was 5.3 years, with the two clubs having adopted it ten years ago and three clubs only two years ago. Of the seven clubs that have not adopted a Club Website, two had made the decision to adopt it and five were still in the Persuasion stage.

Association or Third Party Website

The survey showed that 88% of the clubs surveyed were in the Confirmation stage for using the Association's website. Even though this Association used a third party website, the Association housed its website on it. From the clubs in the Confirmation stage, 93% of the clubs nominated their Secretaries as main users, followed by Presidents. The average length of time the clubs had been using the website was about four and a half years, with the highest user being seven years and the shortest being two years. There were only two clubs that had not adopted this innovation and had made the decision not to use it.

Dealing with Game Statistics

Like hockey, there was a relatively low percentage of clubs that had adopted this innovation. This might be because the referees enter the match results and the player's statistics into the system themselves and the club had no involvement in the operation of the online package. With Cricket Associations the clubs are responsible for the reporting of this information to the Association. Of the soccer clubs in the Confirmation stage the average for adopting this innovation was 4.3 years, the oldest adopters being seven years and the youngest two.

Summary of the Surveys

Overall, this Association is quite advanced with the adoption of Email and the use of the Association's website, however less so when compared with the other applications. There were six clubs that had adopted all of the innovations. There were also six clubs that had adopted either only one or two of the innovations. From the clubs in this Association, the average number of years all of the innovations had been adopted was 3.7 years. This is ranked fifth in front of Colac (on 2.8 years) and behind North Metro (on 4.9 years). Figure 43 shows how long each of the clubs had adopted each of the Internet Applications.

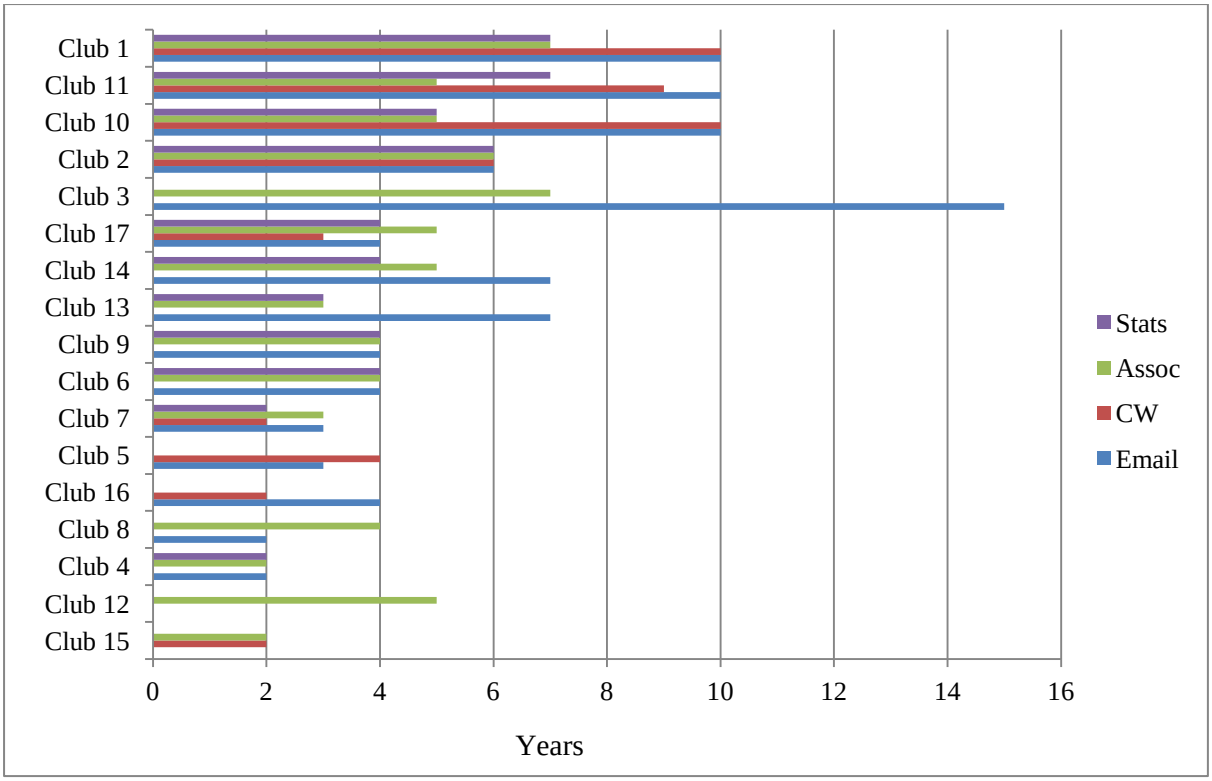


Figure 43 - The Amount of Years Each Club had used an Internet Application

Interviews

Five members of the Geelong Football Association, from three different Soccer clubs were interviewed. The interviewees were all on the committee of their clubs and generally had an appointed position like Treasurer or Secretary.

This was the second time an 'other' sport was analysed. Overall there were similar findings to Hockey. This Association used a third party system to administer the Online Statistics, the Association's Website and some of the clubs' websites. Again, like the Hockey Association, each match had its own umpire who handled the match administration for the Association. At the time of the interviews, it was revealed to the researcher that there was going to be a major 'shake up' with the structure of Soccer in Victoria. This would see all of the Association's in Victoria dissolved and become regions within Victoria controlled by Football Federation Victoria. Therefore, for the next season, this Association would become the "Geelong region", instead of the "Geelong Soccer Association".

Club 1

There were two people interviewed from Club 1, these were the President of the sports club and the Soccer Delegate. This sporting club had soccer, cricket and darts teams. However, as cricket and soccer are played in opposing seasons, there was no real crossover between these sports, except when preseason training was held for each sport. This interview was conducted at the clubrooms of the club, after their training. This sporting club had three division men's teams, one division woman's team and a social team. Adding to this they had three senior and four junior cricket teams. For this interview, the interviewees were mainly asked to speak about the soccer side of the club's operations. Both of the interviews were quite familiar with the technology terms. The President that was interviewed was aged in his 50s and held a professional position. The Soccer Delegate was aged in his 40s and was a tradesperson.

Email

The Soccer Delegate was not part of the implementation of email and commented that "this was all done before I was the Soccer Delegate". Whereas, the President commented that when he was part of the Committee at the Cricket club, they started sending emails around the Committee and it had "grown from there". Both of the interviewees found out about email through work and personal use. The President added that he had "been using it for a while at work". When asked about the benefits email provided, the Soccer Delegate said that "it is very quick and you get very fast replies to questions to the Association". The President added that "communicating with the Committee is much easier than calling each of them and telling them the same stuff". Asked whether email had changed the way they performed their duties at the club, the President replied "I think it had, it is much easier to communicate to people and feels like it is the most efficient way to communicate to people as a group. Before email we had mail (paper) to everyone, now we can email". The Soccer Delegate added that communicating "between the Association and coaches is much faster and easier". Email was not difficult for the interviewees to understand, as they had used it through work and personal use. Both had trialled email through using it through work and personal use before they used email at the club. Neither of them were directly involved in the decision to adopt email, however the President did comment that when he was on the Committee for the Cricket club "someone started sending emails" and it continued from there. In the future, they will continue to use email. The President added that it is a "quick and very efficient. Gone are the days of mailouts, which is handy as we have a lot of members".

Club Website

This is a combined Club Website, which had areas for all of the sports played at this club. The President and the Soccer Delegate were both involved in setting up this innovation. The President was more directly involved adding that" we use to have two websites, one for Cricket (on the Cricket Victoria free Online Statistics Website) and one for Soccer (on the ResultsVault). Now we have recently launched another one, however it is for the Sports Clubs". The researcher viewed this website. It is a standalone website which is connected to a database. The match results and the player's statistics are housed in this website. The website was still under construction. The Soccer Delegate added that "the new website was used to give the sporting club more of a sense of community, instead of a Cricket club and a Soccer club that share the same venue". Asked whether it had changed the way they perform their tasks at the club, the Soccer Delegate said that "it has, now I have to make sure all of the new people are there (in the database connected to the website) and that the scores and ladders are up to date". The President commented that "it has in the short term and I now need to give our Webmaster all the information he needs to complete it, it had been difficult find it for him". Both of them found out about having a website at the club through former Committee Members at the club. Neither of them found the Club Website difficult to use, however as had been demonstrated before, they are probably experiencing it from an end-user perspective and not the programmer's perspective. Only the President had a chance to observe the website. He commented that "I looked at other sporting clubs to get ideas about how to structure a website which had two sports on it. Linking it to a database was the IT guy's idea". However, with the website 'still under construction', both the President and the Soccer Delegate would continue to use the Club's Website into the future, with the Soccer Delegate commenting that "it will be great when it is finished".

Association or Third Party Website

When the interviewees were asked about this innovation, the President commented that he "didn't really have much to do with the Association's Website". However, as the Soccer Delegate is the link between the Association and the club, he fielded most of the questions for this innovation. The Soccer

Delegate said he was not involved with the set up of the Website and that "this was done by the Association. We have been on ResultsVault[7] for a number of years now and it is a great website". This Association used ResultsVault to house the Online Statistics (like fixtures, ladders, players' goals, etc), however it also had an integrated section for the Association and clubs to have a website. The websites can be tailored to each club or Association. Because of this, the lines are blurred between online statistics, association website, club website and a third party website. The Soccer Delegate continued with "the website has lots of information and is a good way for the information to be given out". The President and the Soccer Delegate both found out about the Association's Website through the Association as "they promote it at every delegates' meeting" added the Soccer Delegate. The President commented that he could remember the "days before the Internet, everything was mailed out and we didn't know the ladders for most of the season. Now I can find out right now if I wanted to". When asked if the Association's Website had changed the way they operate at the club, the Soccer Delegate said that "it has, now all the information about the Association is at my finger tips, we don't have to wait for months to see the ladders, or have delays in the Association giving us information". Neither of them had a chance to trial, nor observe, the website before it was implemented. When asked whether they will continue to use the Association Website into the future, both of them said they would, the Soccer Delegate added that "it is a great resource for clubs".

Dealing with Game Statistics

Like the Hockey Association, the umpires in this Association entered the data for the match results and players' statistics. This is unlike Cricket. As the Association used ResultsVault, neither of the interviewees were involved in the setup of this application. The Soccer Delegate added that he "likes to print out the results, ladders and who scored the goals and pin them up around the club rooms". Both of the interviewees found out about the Online Statistics from the Association. The Soccer Delegate added that "I found out about it more indirectly through the Association, when they promoted their website, the statistics are all there too". When asked about the benefits of having the statistics online, the President said that "having them online makes us feel more professional and we also have an idea of who the players that are scoring goals". The Soccer Delegate then added that "it's good, because we know exactly where our club stands (on the ladder) within the Association – this may not always be a good thing though!". Asked whether this innovation had changed the way they operated at the club, the President commented that "no, not really. Unlike the Cricket side of the club, the umpires enter the results. All that means to us is that the statistics are very assessable". When asked how the decision to adopt this online statistics package came about, the Soccer Delegate said "it was the Association. When they wanted to have things online, they chose ResultsVault as it's already established". Neither of the interviewees had a chance to trial it, however the President of the club had observed it by viewing other Online Statistics packages for other sports. Both of the interviewees said they will continue to use it into the future. However, the President commented that "it's the Association's choice, however it's an easy system to use". The Soccer Delegate added that "it's good having everything online".

Club 2

In Club 2 only the Secretary was interviewed. This was a relatively small club with two senior teams in the men's main division and three indoor sides. This club was founded in 2008 for the residents of a new housing development. The Secretary was aged in his 40s and employed in a professional position. He was very familiar with the technology terms. As this was still a new club, they were trying to promote themselves and build a stronger club.

[7] ResultsVault is a private third party operator – See Chapter 7

Email

The Secretary implemented email, adding that "as we are a relatively new club, we want to get our systems right from the start. This involved setting up email registers and communicating to our members". The Secretary administered the email system for this club. He used email at the club to send information about news and events to their members and also to communicate with the Association. He commented that "the Association send out emails to our account and I have to respond to them, or forward them to the right person (within the club)". The Secretary found out about using email through having a personal email account and decided to set one up for the club. He went on to outline the benefits of having email as "it's fast and the communication is instant. I can't imagine calling everyone I want to get a message too, it would take too long". When asked whether it had changed the way he performed his duties at the club, he said "no, as we are quite a new club, we have always used email". This innovation was not difficult for him to use, or understand. The Secretary did have a chance to trial email before using it at the club and this was through having a personal account beforehand. Some of the decisions that led to the adoption of email with this club were, "that we wanted to have these processes in place from the start (of the new club). Therefore, I can send out messages to our members with the confidence that the message it getting through". Asked if this he would continue to use email into the future, he commented "certainly, I can't imagine a better way of sending out a message to a group of people".

Club Website

Like the previous innovation, the Club Website was administered by the Secretary. Asked whether he was responsible for setting up this innovation, he commented "I was. As we are a new club, we wanted to have a website as a promotional tool to new members". In regards to the benefits the website provided the club, the Secretary commented that "it gave the club more exposure for new members and also was a central place to give our existing members information". The website had not changed the way he performed his tasks. He went on to say that "one of the first things we did was to build a website, so it gave a point for people to get information". Asked whether it was difficult for him to understand, he commented that "it wasn't, it's a template, so there is no actually coding". He did not have a chance to trial it before it was implemented, however did see it in operation beforehand. The Secretary commented that "I went to other soccer websites to get an idea of what to put up there (on the Club Website)". He was the person who made the decision to adopt this innovation adding that "I felt it was necessary to have a website, so I made the decision. We are not in the dark ages anymore". The Secretary will continue to use the Club Website into the future, as "it is one of main things we use to give players information".

Association or Third Party Website

As with most of the other Associations investigated, the Association's Website was developed and controlled by the Association. The Secretary was asked whether he was involved in the setup of the innovation and he replied "no, this was done by the Association and was already in place before our club started". He used the website to access information about the Association, like news, events and results. Asked about how he found out about the innovation, he said they found out "through the Association". This is a relatively new club and therefore had not experienced life before the Association implemented these innovations. However, when asked about the benefits that the website provided, he said "that is really good having all the information online and available anytime. I can check the ladders and fixtures anytime". When asked if this innovation had changed the way the Secretary performed his tasked, he remarked "nah, as far as I'm concerned, it has always been there". When asked if he had difficulty using the Association's Website, he said "it's pretty straightforward, there are lots of menus, so clicking to different sections is pretty easy". As the website had always

been there, he did not have a chance to trial it or observe it. He was not involved in the decision to adopt as the website was there before his club started. When he was asked if he would continue to use it into the future, the Secretary said "yes, I can't image a better way".

Dealing with Game Statistics

For this club it was difficult to separate the Online Statistics and the Association's Website. The interviewee was asked to answer the questions for the Statistics part of the website. When asked whether he was involved in the set up of this innovation, he said he was not as this was "done by ResultsVaults". As the Secretary, he was the major user of this Online Statistics package. He continued that "usually I would print out the weekly results, ladders and the Golden Boot[8] stuff and hang it around the club". He found out about the innovation through the Association, adding that "I have been around Soccer clubs for a number of years and having the statistics on the Internet is pretty standard these days". Ask how it had changed the way he performed his tasks, he replied, "it has not, the statistics have been online since the club started. The innovation was not difficult for him to use and understand. He remarked that "as there are not that many statistics online, it was pretty easy to workout". The Secretary did not have a chance to trial it or observe it, as the Online Statistic Package was there before he was Secretary. He will continue to use the innovation into the future saying that "it's easy and I can access it anywhere".

Club 3

The President was interviewed at Club 3. The interview was conducted at his home. Like Club 2, this was a relatively small club with one senior team and two junior teams. This club was eight years old. Asked about the technology terms, he was "quite" familiar with them. The President was aged in his 40s and was a Tradesman and said they use only Email and had a Club Website. This was a small club and the President commented that as they are a small club, "we do not need the formalities of some of the bigger clubs".

Email

The interviewee had been the President for a number of years and was part of the Committee when Email was implemented four years ago. The Committee began sending emails to each other at the start of one year and they have been doing so ever since. The President added that "we have discussions on email and then tell the players about our decision at training". The interviewee found out about the innovation through using it at work. When asked about the benefits email had provided, the President commented that before email was implemented, he had to call a number of the other Committee Members to gain consensus on a matter, or had to meet with them as a group, which was often hard to accomplish. Asked whether email was difficult for him to understand, he replied "no, it was very easy". The President had a chance to trial email – through work, however did not have a chance to observe it. He was not involved in the decision to adopt email as the President before him was the person who started to send out the emails. Asked if he will use it into the future, he replied "of course, it is very easy to communicate to everyone at once".

Club Website

This club did have a website and it was part of the ResultsVaults online application. The researcher viewed the website and whist it was a simple website, it did make use of the options available to it, such as an integrated fixture and ladder. When asked if he was involved in the setup of the website, he said "no I wasn't, we have a guy at the club who does it for us". The club used this innovation for information dissemination. The President said he found out about the innovation through someone on

[8] The Golden Boot is an award for the player who scores the most goals in a season

the Committee. The Club Website had been there for four years and he was on the Committee at the time. Asked about the benefits that the Club Website had provided to the club, the President responded that "it's great for giving our players information. Even though we are a small club, it is still good to have a website for our players and sponsors". When asked if the Club Website changed the way he preformed his duties, the President replied "a little, all I do is give the teams to the IT guy and he puts them online". Asked if the innovation was difficult for him to use, the President said that it was not and "all I do is look at the website, the IT guy does the real work". He did not have a chance to trial it, nor see it in operation, as he was not part of that process within the club. Asked if he was involved in the decision to adopt, he replied "at a certain level, we had a vote at a committee meeting one year and it was voted in". For the question of whether they will keep it into the future, the President said "yes we will, the player expect information to be on it and we have them checking it regularly".

Association or Third Party Website

The President of this Club was not involved with the setup of the Association's Website. The President added that it was not really used at the club, "generally the only time we use the website is to go to the fixtures and ladders section. The Secretary may use it though". Asked how he found out about the website, the President replied that he found out through the Secretary, adding that "he (the Secretary) told us some news from the Association and I asked where did he hear that from. He said it was on their website". The President was in the Knowledge stage and decided that he did not need to use it.

Dealing with Game Statistics

The President said that he did not use Online Statistics, as "I sometimes use it to look at fixtures and the ladder, but that is rare". He found out about the innovation through the Secretary.

Framework and Results

This section summarises how the Geelong Soccer Association had progressed along the Innovation-Decision process for each Internet Application.

Email

The surveys suggest that the Geelong Soccer Association is an advanced Association in regard to the use of Email. 15 of the 17 clubs are in the Confirmation stage and will continue to use it into the future. With the other two clubs, one had decided to use it and this was decided by the President. The other club is Knowledge stage. Of the clubs in the Confirmation stage, 88% of the clubs said that their Secretary and President used email, followed by the Treasurer and the Committee Members. Figure 44 shows the results of the survey.

Stages of Adoption					**Confirmation Stage**						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Email	100%	94%	88%	88%	88%	58%	82%	88%	70%	35%	41%

Figure 44 - I-D Mapping from the Surveys and who uses it for Email

All of the clubs interviewed had moved through the five stages of the adoption process.

In the Knowledge stage, the interviewees found out about email through both personal use and from using it through work. This has been a common finding across all of the associations.

The Persuasion stage of the Innovation-Decision process (Rogers, 2003) forms the argument for the decision to adopt the innovation. The interviews conducted in this Association showed the *relative*

advantage for having email at the club was to have to "processes in place from the start (of the club)". The *compatibility* of the innovation was that it would replace paper mailout and having to telephone the members. Three of the interviewees did not have any trouble in understanding the technology. All of the interviewees had *trialled* email through either work or personal use. Lastly, the President of Club 3 commented that he did have a chance to *observe* the innovation before it was adopted. Generally, the interviewees perceived the benefits of email use through their uses personal or professional use.

Only the President of Club 3 and the interviewees of Club 1 commented on the adoption decision and they were not involved in the decision to adopt email

In regards to the implementation of email at this Association had come from a number of influences. At an Organisational level, the themes were centred around Club Committees sending emails to each other to discuss topics and from the Association sending the Clubs' representatives emails to inform them. At an individual level, the President and the Soccer Delegate of Club 1 said that email was setup before they were at the Club. However, the Secretary of Club 2 said he set it up.

In relation to the Organisational level of the Confirmation stage, the interviewees at Club 1 and 2 indicated that they will continue to use it as it is "much easier" and "faster" than telephoning people involved at the club. The Secretary of Club 2 added that he "can send out messages to our members with the confidence that the message is getting through". At an individual level, the same themes are echoed. The quickness and ease of sending the messages were highlighted by all of the interviewees.

The Framework

Table 52 shows a summary from the interviews for email. The knowledge for this innovation was gained through work and personal use of email. In the Persuasion stage, the *relative advantage* of email was wanting to have it in place at the start of the new club and get the members reliant on it from the start. This would cement email as the preferred communication method of the club. The *compatibility* of the innovation was that it could replace paper mailouts and having to call numerous people informing them of the same message. None of the interviewees had a problem with the level of *complexity* of the email and all had the chance to *trial* it though work or personal use. Only the President of Club 3 commented that he did not have a chance to *observe* email before using it. Once the innovation was implemented, it was used to communicate with the Association and within the Club's Executive Committee. The Secretary at Club 2 commented that he was the one who set up email within his Club. All of the interviewees agreed that they would continue to use email into the future, with the themes being about ease of communication of sending and receiving communications, and the fast responses to queries to each other, and to the association.

Table 52 - Research Framework with the Geelong Results for Email

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution				+Communicate to Association	+Ease of Communication
Organisation	[redacted]	+Relative Advantage ++Compatibility		++Committee Started Sending out Emails ++Communicate within Committee	++Ease of Communication +Confident Message getting through to Members
Individual	+++Found out via Work ++Found out via Personal use	++++Complexity ++++Trialability ^Observation		+Setup before he was Soccer Delegate ^^Not Involved in Setup +Secretary Setup Email	+Fast response to Queries +Ease of Communication ++Fast and Instant Communication
Other					

Club Website

The survey results for the Club Website application showed that half of the clubs are in the Confirmation stage and those Clubs would continue to use it into the future. From the clubs who have adopted a website, the average age of these websites were 5.3 years. Of the clubs that have not adopted a Club Website, two were planning to use it and five were not. The highest users of the innovation (from the Clubs in the Confirmation stage) were Secretaries (on 85%). Figure 45 shows the results of the survey.

Stages of Adoption					Confirmation Stage						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
C W	100%	70%	58%	52%	58%	52%	52%	85%	52%	52%	52%

Figure 45 - I-D Mapping from the Surveys and who uses it for Club Website

All of the interviewed clubs have moved through the five stages of the adoption process.

The interviewees found out (Knowledge stage) about the club website through someone at the club. This is classed as an individual influence as it was not from the Committee, the Association, a third party, or another Institution. Generally, the method of gaining knowledge from this innovation was either via the association or from someone within the club itself.

In the Persuasion stage, none of the interviewees had difficulty with the *complexity* of the innovation, with the President of Club 3 commenting that the "IT guy does the real work". The President of Club 1 and the Secretary of Club 2 had both *observed* Websites from other sporting clubs.

The interviewees have suggested that the decision to implement a Club Website had come from a Committee vote and from the Secretary of Club 2. The Secretary of Club 2 had championed the cause at this club.

In the Implementation stage, there were many themes that came out of the interviews about the implementation of this innovation at Soccer Clubs. At an organisational level, the major theme was to build community within the sporting club (which encompasses a number of sporting clubs). The Secretary of Club 2 commented that they used the website as a promotional tool and as an instrument for diffusing information. The representatives of Club 1 commented that as they have linked their own database to their own stand alone website, there was more work involved in keeping this website up to date. The President of Club 3 said that his Club had a dedicated IT person and they did the work of uploading the new information. Overall, the implementation of this innovation required the most amount of technical knowledge, and the major issue to successful implementation was sourcing someone to develop the website.

In regards to the Confirmation stage, the representatives of Club 2 and Club 3 said it was a good tool for diffusing information to players and sponsors. Club 1 will continue to use it into the future, as will Club 3. However, the President of Club 3 noted that their "players expect information to be on it and we have them checking it regularly". Overall, the clubs would continue to use the club website, however, the problem they found is that it needs to be updated regularly.

The Framework

Table 53 shows a summary from the interviews for Club Website. The knowledge for club website came from the members of the committee. Of the interviewees who commented on the *complexity* of the innovation, most of the interviewees had no problem with understanding the Club Website. Also, two of the interviewees had *observed* other clubs' websites. The decision to adopt this innovation was made by the Committee or by the club Secretary. The Club Website was used to relaunch one sporting club, build a sense of community and as a promotional tool. However, its implementation had resulted in more responsibility for one club's representatives. One benefit of the website was that it was a useful tool for communicating information to the players from the Committee.

Table 53 - Research Framework with the Geelong Results for Club Website

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution					
Organisation	[redacted]		+Committee Voted	+Relaunched Sports Club Website +Sense of Community +Promotional Tool	++Main Tool of Information Diffusion
Individual	++Found out via a Committee Member	+++Complexity ++Observability	+Secretary made the Decision	+Linking it to a Stand Alone Database ^More responsibility ^Not Involved +IT guys maintains it	+Better when Finished
Other					

Association or Third Party Website

The results of the survey administered to this Association showed that 15 of the 17 clubs used the Third Party Website. Of the clubs that were in the Confirmation stage, the Secretaries were the largest users. The two Clubs that had not adopted the innovation did know of the Third Party Website existence, however are not using it. Figure 46 shows the results of the survey.

Stages of Adoption					**Confirmation Stage**						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Assoc	100%	88%	88%	88%	20%	13%	0%	93%	6%	6%	13%

Figure 46 - I-D Mapping from the Surveys and who uses it for Association Website

Three of the interviewees found out about the Third Party Website through the Association. The Soccer Delegate commented that "they (the Association) promote it (the Website) at every delegates' meeting". The President of Club 3 said that he found out about the Association's Website when the Secretary told him about something about the association. The President of Club 3 asked "where did he hear that from?, he (the Secretary) said it was on the Association's Website". Overall, and much like the other associations, this Association was the main source with club's gaining knowledge about this innovation.

In the Persuasion stage, the interviewees from Clubs 1 and 2 did not have a chance to *trial*, nor *observe*, the website. This was of little surprise, as the association built the website and them told clubs to use it.

The Association made the decision to adopt this innovation.

The Association implemented this application. The interviewees used the innovation for viewing information. However, they are also using it as a method of gaining information from the Online Statistics application, in viewing the fixtures and ladders.

However, this application was administered by the Association and therefore out of the Club's representative's level of control to make this decision. The general themes in the Confirmation stage were the interviewees were happy with the website and liked having information online "is a good way for the information to be given out". The Secretary of Club 2 commented that he "can't imagine a better way". All of the interviewees will continue to use it into the future.

The Framework

Table 54 provides a summary of the comments from the interviews related to third party websites. The themes from the interviews suggested that knowledge for the Third Party Website came from the Association on three occasions and from an individual within the Club on one occasion. In the Persuasion stage, none of the interviewees had a chance to *trial*, nor *observe*, the innovation before it was implemented. The Association implemented this website. Club representatives commented that it was used to check the match ladders and game fixtures. All of the interviewees were happy with the innovation and liked the manner in which it helped to diffuse information.

Table 54 - Research Framework with the Geelong Results for Third Party Website

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	++++Found out via Association			^^Association Implemented	+"Have been on Results Vault for a number of years now and and it is a great website"
Organisation					
Individual	+Found out via Club Secretary	^^^Trialability ^^^Observability		++Used for Checking Ladders & Fixtures ^Rarely used +Access to the Website +Had not changed his role (Website always been there) +Ease of use	++Information Diffusion +Information is Available +Unable to Think of a Better way of Diffusing Information +Continued use
Other					

Online Statistics

The delineation of the Online Statistics and the Association/Third Party Website is much more difficult to show in this Association. This might be due to a few reasons, for example the lack of statistics required for this sport and the application of an integrated package which encompasses the Association Website, the Online Statistics and Club Websites. The survey results showed that 64% of the Clubs are in the Confirmation stage. Out of these Clubs, the most common users were the Secretaries on 64%. Of the six Clubs that have not in the Confirmation stage, one of them is planning to use it and this decision was made by the President. The remaining five Clubs know about the innovation, however they are not planning to use it. Figure 47 shows the results of the survey.

Stages of Adoption					Confirmation Stage						
					Administration					*Competition*	
	Know	Pers	Adop	Conf	Pres	VP	TR	Sec	Comm	Coach	Player
Stats	100%	70%	64%	64%	46%	46%	46%	100%	46%	46%	46%

Figure 47 - I-D Mapping from the Surveys and who uses it for Online Statistics

The knowledge about this innovation generally was sourced through the Association through delegate meetings and communications. The other interviewee found out through the Secretary of his Club.

During the Persuasion stage of the Online Statics application, the Secretary of Club 2 said he did not find the innovation difficult for him to understand. Three of the interviewees did not have the chance to *trial* this innovation. However, the President of Club 1 did mention that he had *observed* the Online Statistics package through participating in other sports. The Secretary of Club 2 did not have the same opportunity.

In regards to the Decision stage, only one of the interviewees, the Soccer Delegate of Club 1, commented on the decision to adopt this innovation, stating that the decision was made by the Association. He recalled they "chose ResultsVault as it's already established. Unlike the other

associations, this was a rare insight into the thinking of the association into the decision making process in choosing ResultsVault as their online statistics application.

In relation to the Implementation stage, the delegates of Club 1 said they "use it (Online Statistics) to print out ladders, fixtures and the highest goal scorer, then hang them up around the club rooms". The President of Club 1 commented that "having them (the statistics) online makes us feel more professional". The President and Soccer Delegate of Club 1 and the Secretary of Club 2 said they were not involved in setting up of the innovation. The researcher is not surprised by this, as it is a third party system setup by a private company.

The Confirmation stage showed all of the interviewees will be using this innovation into the future. The President of Club 1 commented that it was the Association's decision to keep using it. This statement was repeated throughout the other associations. However, if a club choose not to use it, the association would generally impose fines or loss of match points.

The Framework

Table 55 shows a summary from the interviews for Online Statistics. The interviewees found out about the innovation through the Association. This had also been the trend for this Internet application in other sporting associations in this study. One theme in the Persuasion stage suggested that none of the interviewees had a chance to *trial* the innovation, nor have a real chance to *observe* it either. One of the interviewees commented that the Association made the decision to adopt this innovation. Once implemented, the interviewees said they posted the match results around the clubrooms and liked the advantage of having up to date results and ladders at their fingertips. In the Confirmation stage, the interviewees commented that they will continue to use it. However, in the end it was the Association's decision to implement it, but the club's decision on how they use it. This was also the trend with the other Associations. However with the Cricket Associations, the clubs' delegates were the individuals who enter the match results' and players statistics. With the soccer (and hockey) association, results were entered by the referees. Therefore, the clubs are provided with a service from the Association which adds very valuable information (like fixtures and standings) in a timely manner.

Table 55 - Research Framework with the Geelong Results for Online Statistics

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	+++Found out via Association		^Association Made Decision		
Organisation				++Post Results Around Club Rooms	
Individual	+Found out via Secretary	+Complexity ^^^Trialability +^Observability		+Feels More Professional with Statistics +Up To Date Results Online +Statistics Very Accessible +Ease of Use ++Rarely Used	++Continued Use +Association's Decision to Use ++Ease of Use +"Good Having it Online" +Standard (having Statistics Online) These Days
Other					

9.4 Summary

This chapter applied the research framework to two sports with simple scoring schemes, Hockey and Soccer. The first three applications, namely email, Club Website and the Association or Third Party Website, operated in much the same way as they did in the Cricket associations. However, the main difference between these sports and cricket were the level of complexity in regard to statistics. cricket has a complex scoring system when compared to hockey and soccer. In the two sports investigated in this chapter, the match umpires entered the statistics into the online system and the clubs generally only viewed the ladders and fixtures. Further discussion on this provided in the next chapter.

10 Chapter Ten – Discussion

10.1 Introduction

This chapter examines each of the Internet applications investigated and describes 'how' and 'why' they were being adopted. Each Internet application is discussed in full with regards to the results of the survey and interviews. The last section of the chapter compares the Internet applications with each other.

Individuals and organisations are adopters of innovations. Research into organisational adoption across different disciplines has allowed us to determine a set of factors that have influenced us into accepting a new innovation within an organisation (Frambacha & Schillewaert, 2002). However when an organisation needs to make a decision to implement, there are three types of decisions an organisations can make. These are;

- Optional innovation-decisions,
- Collective innovation-decisions, and
- Authority innovation-decisions.

The survey yielded a large amount of data across the six Associations. The idea of administering the survey during a delegates meeting was valuable, as it produced a high return rate. Out of a possible 105 clubs, 87 Clubs returned the surveyed, which produced an overall return rate of 82%. This figure was adversely affected by the Christchurch Hockey Association only returning 55% of surveys. The overall return rate was quite high, with surveys to organisations typically receiving substantially lower return rates than surveys to individuals. Sometimes 15% is considered an acceptable return rate (Hager, Wilson, Pollak, & Rooney, 2003; Baldauf, Reisinger, & Moncrief, 1999; Tomaskovic-Devey, Leiter, & Thompson, 1994).

Overall, there were 26 interviews (with 17 Cricket club administrators, five Hockey club administrators and four Soccer club administrators) over a total of 16 Clubs. There were many themes that emerged from these interviews. These themes have been discussed for each Internet application and Association in Chapters 7, 8 and 9. These themes were incorporated into the research framework for each Internet application.

10.2 Overall Research Framework

The results of each Internet application will now be discussed in detail. Cricket and Other Sports are discussed separately. The reason for this is due to the differences in the complexities in their scoring systems. Cricket is a complex scoring sport, where each delivery (ball bowled by the bowler) is accounted for. However, the 'other sports', Hockey and Soccer, are simple scoring sports. For these sports, at a local level, only the scores (which are often low) are typically recorded, as well as the name of the player who scored them. For both Associations in this study, these statistics were recorded by the umpire and it was their responsibility to upload them. The first of the Internet application to be discussed is email.

10.2.1 Email

Email is an asynchronous communication tool that is inexpensive to operate (Berghel, 1997). Most of the sporting bodies in this study adopted email and were in the Confirmation stage. Email has been in widespread adoption since the early days of computer networks and bulletin board services (Berghel, 1997) and therefore it is unsurprising it had diffused into local sporting bodies.

Cricket

The adoption of email as an Internet communication application was widespread throughout most of the studied Associations. Figure 48 shows all but one of the Associations were in the Confirmation stage with a higher than 90% participation rate amongst the Clubs. Colac had 58% of their Clubs surveyed in the Confirmation stage, which brings down the overall average to 83%.

Stages of Adoption				
Associations	Knowledge	Persuasion	Adoption	Confirmation
Auckland	100%	100%	100%	100%
HCPCL	100%	100%	92%	92%
North Metro	100%	100%	92%	92%
Colac	94%	88%	70%	58%
Overall	98%	96%	86%	83%

Figure 48 - The Survey Results for the Stages for the Framework for Email for Cricket

Table 56 provides a summary of the interviews and shows comments in each stage of the Innovation-Decisions Process. The framework was populated with the major comments from the interviews, however the 'major' themes have been bolded to highlight them.

Table 56 - Overall Framework for Email Adoption for Cricket Associations

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	**3xFound out via Association**		^Association made decision to accept	2+Association started to send Emails to Clubs +Cricket Victoria Supplied Email to Clubs +Club Communicates with Association	^Association falling behind with email
Organisation	[redacted]		^Club Develop Managers was told to adopt	2+Secretary Implemented email lists 2+Comm within Club +Junior Co-ordinator emails games +Becoming the norm for communication +Sponsors receive Information about the Club ^Implement, but not used ^Rather call on Match Days	+Communication within Club ^Need to call if Players do not check email
Individual	**6xFound out via work** 2xFound out via Personal use 1xFound out through Vice President 1xFound out via Development Manager	**12+Trialability** **7+Relative Advantage** **5^Relative Advantage** 2+Complexity 2^Complexity 2^Observability 2^Trialability +Compatibility ^Compatibility	**6+Members of the Committee made the Decision to Adopt**	**5+Ease of Use** **4^Training** **3+Account Setup by Club Person** 2+Interviewee Helped process 2+Used as Primary Communication Tool +Low Cost needed +Easy to Implement +Individuals have their own email addresses which they use for the Club ^Problems using it at the start	**9+Ease of Use** **3+Convenient** **3+Cost** 2+Leaves paper trail 2+has its place as a Communication Tool 2+Cuts Down Work for Volunteer ^Call players if they did not have an email account +Becoming the 'Norm' +Reduced meetings +Gains in workplace +Good to use +Quick to use +New Trend with technology +Easier than many Calling People
Other			2+Unknown		

According to the results of the surveys, email was the most adopted Internet application by Cricketing Associations. All of the clubs that were interviewed in this study were in the Confirmation stage of the Innovation-Decision Process. The respondents mostly found out about Email through work or via the Association, however a small proportion found out through personal use. In the Persuasion stage, most of the *trialability* occurrences were through using email at work and through personal use. The *relative advantages* of email were generally associated with the ease of email use when compared to existing alternatives. These included speed of communication, sending out a message to multiple receptionists at once and all of the correspondence being documented. The decisions to adopt email were mainly made by members of the administration of the clubs. However, there was one occurrence where the Association started to send out emails one season and the clubs had to 'follow their lead'. The main comments from the Implementation stage, was the ease of use on one hand, however in some instances there was a need for more training after the innovation was implemented. The 'Ease of Use' theme in the Implementation stage refers to comments about it being easy to understand and use. In the Confirmation stage, the interviewees commented that email was convenient, low cost to operator and ease of use.

Figure 49 shows the most common users for this application were Secretaries, followed by Presidents, Treasurers and Coaches. This is not a surprising outcome. Secretaries are generally on the Club Executive Committee and are a club's representative to the Association. Thus they have two groups to communicate with, the club Executive Committee and the Association. With the Colac Association, the level of use for this innovation is extremely low when compared to the other Associations. Figure 49 shows the results from the surveys for Internet Communication Applications.

Stages of Adoption	**Confirmation Stage**						
	Administration					*Competition*	
Associations	President	Vice President	Treasurer	Secretary	Committee	Coach	Player
Auckland	57%	0%	71%	85%	85%	100%	57%
HCPCL	72%	45%	90%	100%	72%	90%	72%
North Metro	72%	45%	59%	81%	54%	40%	31%
Colac	33%	25%	8%	66%	8%	25%	25%
Overall	62%	38%	56%	83%	52%	56%	42%

Figure 49 - The Survey Results for Club Members in the Confirmation Stage for Email in Cricket Associations

Other Sports

The adoption of email within the Soccer and Hockey Associations (which will be referred to as the "Other Sports") has shown high level of adoption. All of the Clubs surveyed in the Christchurch Hockey Association were in the Confirmation stage and 88% of Clubs surveyed in the Geelong Football (Soccer) Association were in the same stage. As stated a number of times, these results (including the Cricket Associations) are of little surprise to the researcher, as email lends itself to facilitating board communication between the Executive Committee and other Committee Members (at an Association and/or Club level). Figure 50 shows the results from the surveys for Internet Communication Applications.

Stages of Adoption				
	Knowledge	Persuasion	Adoption	Confirmation
Christchurch	100%	100%	100%	100%
Geelong	100%	94%	88%	88%
Overall	100%	96%	93%	93%

Figure 50 - The Survey Results for the Stages for the Framework for Email in Other Sports Associations

Table 57 is a summary from the interviews and shows comments in each stage of the Innovation-Decisions Process.

Table 57 - Overall Framework for Email Adoption for Hockey and Soccer Associations

Innovation-decision Influences	**Innovation-Decision Process**				
	Knowledge	**Persuasion**	**Decision**	**Implementation**	**Confirmation**
Institution	-Found out via Association			2+Association sent out emails	^Amount of Email from Association +Ease of Communication
Organisation		2+Compatibility +Relative Advantage		**5+Information Diffusion** 2+Less phone calls 2+Committee Started Sending out Emails 2+Communicate with Committee	2+Ease of Communication +Confident Message getting through to Members
Individual	**6xFound out via Personal use** **5xFound out via Work**	**9+Relative Advantage** **9+Trialability** **5+Complexity** 2+Observation 2^Observation	**4^Individuals did not make Decision** +Individual made Decision to accept	2+Sent email within committee 2^Not Involved in Setup +Easier than thought +No mail outs +Reach members better ^More training needed +Setup before he was Soccer Delegate +Secretary Setup Email	2+Ease of use 2+Saves time 2+Fast and Instant Communication +Saves Money +Saves Space (Printing) ^Updating list +Fast response to Queries +Ease of Communication
Other					

The comments from the interviews have shown that knowledge about email was obtained from prior use at home and at work. This was quite similar to the themes from the cricket Associations. In the Persuasion stage, the influences at an individual level were the *relative advantage* of the innovation

that consisted of increasing the speed of communication and having documented conversations in writing. The importance of having these conversations in writing is to keep a record of discussions relevant to the sport. The other significant themes were *trialability* and *complexity*. Most of the *trialability* comments focused on how interviewees had previously used email in their business and personal life before using it at their sporting clubs. The *complexity* theme actually involved a 'lack' of complexity, with most interviewees commenting that it was not difficult for them to understand. The Decision to adopt email was not made by four interviewees; however, one interviewee did make the conscious decision to adopt it. One of the comments by a 'non decision maker' was that someone within the committee decided to send an email one day. The major theme in the Implementation stage was the ability for email to disseminate information at an organisational level. However, there were no less than 12 other comments relating to its implementation. This shows the diverse uses and ways to implement email within these Sporting Clubs. This was the same for the Confirmation stage where there were 11 different comments. These mainly relate to ease of use, saving time and its ability to send messages instantly.

The results in Figure 51 indicated that the Clubs are generally using email as a tool to communicate within the Executive Committee and to the Competition group (Coaches and Players). The main users of this innovation were Secretaries, followed by Presidents. The Players have an overall figure of 46%; this was slightly above the overall figure for the Cricket Clubs (42%). The conclusion that can be drawn here may be that the Players in both sports are accessing their required information in another way. This access may depend on the information they require. Match day information, like fixtures and ground locations, may be on either the Club or Association Websites and club related information may be relayed via SMS texting or posted on noticeboards in the clubrooms. However, this is assuming that all of the players need this information. Figure 51 shows the results from the surveys for Internet Communication Applications.

Stages of Adoption	**Confirmation Stage**						
	Administration					*Competition*	
	President	Vice President	Treasurer	Secretary	Committee	Coach	Player
Christchurch	63%	45%	54%	90%	36%	81%	46%
Geelong	100%	66%	94%	100%	80%	40%	46%
Overall	85%	58%	77%	96%	62%	58%	46%

Figure 51 - The Survey Results for Club Members in the Confirmation Stage for Email in Other Sports Associations

Summary of Results for Email

The results of the surveys showed that email had been adopted by most of the clubs in the Associations. When comparing the two types of sports, there does not seem to be any major difference between them. Email is a widespread method of communication throughout the Associations and Clubs. Overall, the category with the highest proportion of users, as per nominated by the Clubs, were the Secretaries. This is not a surprising result when you know the Secretaries use email to communicate with the Executive Committee at their club and with the association. Overall, there were only two Associations where half of their clubs used email with their Players, namely Auckland Cricket Association and Home Countries Premier Cricket League (HCPCL). Generally, the messages being sent to players are reminders. For example "Social function is on this Saturday night", or "Remember to pay your membership". Other information, like team lists for the pending matches and club initiatives can be delivered either via their website or in the Clubrooms at a meeting. It seems SMS Texting is replacing email at some of the Clubs. This will be discussed in more detail in Chapter 11.

There were few differences between the two types of sports with the adoption of email. The benefits include speed, minimal cost and ease of use. This is consistent with the literature that states that one of the most discussed benefits of Internet applications enriching communication (Kenny & Marshall, 2000). The ability to communicate between members of the club Executive Committees was highlighted by the number of volunteers who use this innovation.

The data collected from the surveys and the interviews indicate that members are using email after seeing the gains in the workplace and/or after personal use and then using it in the operations of the Club. However, the researcher believes that the use of SMS texting and the Club Website will start to undermine the influence email has on messages from committees to players.

The adoption of email within these Associations (see Table 56 and Table 57) was mainly shown to be a 'Collective innovation-decision' type (Rogers, 2003). This type of Innovation-Decision Process is categorised by the choice to adopt or reject an innovation. This decision is made by an agreement among the members of the Club. Once the decision is reached, the Club Administration members must proceed accordingly (Rogers, 2003). The influences that have affected this innovation across the two types of sports were the Clubs' Administration members, who were the main drivers of the adoption of this application. However, the distinctions between the types of Organisational innovation-decisions are not as clear cut as one might think. In some of the clubs, there were instances where there was an optional innovation-decision type, or an Authority innovation-decision type. Some examples of the optional innovation-decision type in email were when the Innovation was championed by an Individual (such as the President in Club 3 from Colac and the Secretary of Club 1 in HCPCL). An Authority innovation-decision was when an interviewee commented that email adoption was influenced by the Association (such as North Metro Association when the Association started to send out emails to the Clubs). The next Internet application, Club Website, will now be discussed.

10.2.2 Club Website

A Club Website, like email, can be set up and maintained by a club. However, this can be a double-edged sword, with clubs generally having to make their own decisions about the adoption of a Club Website without direction from their Association. Whist an Association might be extremely savvy with technology and encouraging their clubs, the clubs may chose not to adopt a Website. However, on the other hand, an Association may be naïve with technology, but can still have their clubs adopting a Website.

Overall, the surveys showed some differences between the sports and also highlighted some marked differences between the Associations. There was a high return rate for the surveys for this application.

Cricket

Compared to email, this Internet application had fewer clubs in Rogers' (2003) Confirmation stage. Figure 52 shows that the Auckland Cricket Association (on 100%) and the North Metro Cricket Association (95%) were the leaders amongst the Cricket Associations. Figure 52 shows the results from the surveys for Club Websites.

Stages of Adoption				
	Knowledge	Persuasion	Adoption	Confirmation
Auckland	100%	100%	100%	100%
HCPCL	100%	83%	75%	75%
North Metro	100%	100%	95%	95%
Colac	94%	64%	29%	29%
Overall	98%	87%	73%	73%

Figure 52 - The Survey Results for the Stages for the Framework for Club Websites in Cricket Associations

Table 58 is a summary from the interviews and shows the main comments about each stage of Innovation-Decision Process.

Table 58 - Overall Framework for Club Website Adoption for Cricket Associations

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	**Persuasion**	**Decision**	**Implementation**	**Confirmation**
Institution	**3xFound out via Cricket Victoria** 2xFound out from Association -New Website function on Online Stats System	+Trialability +Relative Advantage	+ Forced by Association ^Forced by Association +Cricket Victoria Influenced	2^No Flexibility (Template style) +Cricket Victoria Supplied Free Website	
Organisation	[redacted]	**4+Relative Advantage**	+Made Club Committee Look Professional +Club Committee Made the Decision	**3+Webmaster managers it** +Official Kick Off Required +Used for Communication to players +Upload results for the members ^Implemented 3 website, only uses one now ^Having to keep it up-to-date	**3+Player Feedback** **3+Website Traffic** 2^Not Used Once Setup +^Webmaster Used/Needed +Appears to Younger Members +Great Communication for Players +Found New Players for the Club ^Must be handled Properly ^Players must use it
Individual	**4xFound out from other Clubs**	**9+Observability** **7+Rel Adv** **4^Trialability** **3+Compatabilty** **3+Complexity** 2+Trialability ^Complexity	**3+Members of the Committee**	**3^Extra Training Needed** 2+No More Paper Mail 2+Easy to use and Understand 2+Easy to Implement 2+ Indirectly involved in Implementation +Club Revamp +Secretary drove Implementation ^Need a Webmaster ^Implemented Understood by Trial and Error +ICT Champion Set It Up +More Responsibility +Housed forms and Club Information +Player Database +Communication Tool	**3+Communication tool** 2+Will Continue to Use It 2+Team Management Easier +Information is Central +Marketing ^More Work Needed ^Must be updated +Time Saving +Ease of Use
Other					

According to the survey results, this Internet application was the second most used application behind email. Like email, this application is generally set up and maintained by the clubs. The knowledge about this application was gained through either members within the Club, the Association and/or the State governing bodies. At an Organisational level the *relative advantage* comments were centred on clubs using their websites to communicate information to their players, particularly the ones aged in their 20s. Adding to this, the website can be used to add value for club sponsors by advertising their services online. At an individual level most of the *observability* comments were how interviewees viewed websites from other clubs and even other sports for inspiration prior to adoption. The *relative advantage* comments were mainly about how websites can provide a central location for players to access information about the club. When deciding upon implementing a Club Website, some of the clubs were forced by the Association or influenced by the State governing body. However, at an individual level, there were three committee members that decided to implement a website. There were a number of ways a Club Website was implemented. These included the website being supplied free, having someone with the capacity to be a webmaster and having the Club Secretary drive the process. However, there were some implementation issues, like the need for training and having to give a member the responsibility of maintaining the Club Website. In the Confirmation stage, the most common themes were how the website provided improved communication from the club Committees to their members. Adding to this was a formal and an informal measure of player feedback. As an informal measure, the players complained to the committee when the teams were not announced online. The formal measure was when the 'hit' rate of the website rose. The comments from the interviews suggest that there are a number of themes that the interviewees followed.

Figure 53 shows that the highest users of this application, when in the Confirmation stage, were Secretaries (77%), then followed Players, Coaches and Committee Members. Out of the four Associations, overall the highest users were the Secretaries (77%), next followed by the Players (59%). One of the reasons for this might be that the Secretaries might be in charge of maintaining the Club Website. Figure 53 shows the results from the surveys for Club Websites.

Stages of Adoption	**Confirmation Stage**						
	Administration					*Competition*	
	President	Vice President	Treasurer	Secretary	Committee	Coach	Player
Auckland	71%	57%	85%	71%	85%	100%	100%
HCPCL	55%	44%	55%	100%	77%	77%	66%
North Metro	56%	34%	52%	73%	56%	39%	43%
Colac	20%	20%	20%	100%	20%	40%	40%
Overall	48%	36%	50%	77%	55%	52%	59%

Figure 53 - The Survey Results for Club Members in the Confirmation Stage for Club Websites in Cricket Associations

Other Sports

The survey in Other Sports revealed that half of the Clubs surveyed were in the Confirmation stage of Club Website adoption. This number is far below that of the Cricket Clubs. The reason for this is that in the hockey association there were a number of school and college clubs that did not have a website and 'piggy backed' off their existing colleague/school website. If the schools and colleges in the Christchurch Hockey Association that were 'piggy backing' on their schools' websites are removed from the data (five schools and colleges out of the 28 surveys), Christchurch's result changes to be 61% of Clubs in the Confirmation stage. Figure 54 shows the results from the surveys for Club Websites.

Stages of Adoption				
	Knowledge	Persuasion	Adoption	Confirmation
Christchurch	100%	54%	46%	46%
Geelong	100%	70%	58%	52%
Overall	100%	64%	54%	50%

Figure 54 - The Survey Results for the Stages for the Framework for Club Websites in Other Sports

Table 59 is a summary from the interviews and shows the main comments about each stage of Innovation-Decision Process.

Table 59 - Overall Framework for Club Website Adoption for Hockey and Soccer Associations

Innovation-decision Influences	**Innovation-Decision Process**				
	Knowledge	**Persuasion**	**Decision**	**Implementation**	**Confirmation**
Institution					
Organisation	[redacted]	2+Relative Advantage	^Committee decided against it +Committee Voted	^Not Implemented at Club ^ISP went broke +Relaunched Sports Club Website +Sense of Community +Promotional Tool	2+Committee has seen advantages 2+Main Tool of Information Diffusion +Lifts Club Profile +Central Access
Individual	**3xFound out via Committee Member** -Found out via ICT Person	**5+Complexity** **4+Observability** ^Complexity +Trialability ^Trialability ^Observability	+Secretary made the Decision	+Wealth of information +Worldwide access +Core tasks remain ^More Training +Linking it to a Stand Alone Database ^More responsibility +IT guy maintains it	**3+Will Continue its use** 2+Efficient Gains +Communication with Members +Better when Finished
Other	2xUnknown				

Having a Club Website can give Club Members access to club information anywhere in the world, however the Clubs need some sort of ICT expertise to set it up and maintain it. The main influence in the Knowledge stage was interviewees finding out via a Committee Member at the club. This generally occurred through informal communication around the club. In the Persuasion stage, the most common theme was *complexity* and *observability*. The *complexity* of the innovation was the lack of difficulty in understanding the concept of a Club Website and the interviewees viewing (observing) the websites of other sporting Clubs to gain ideas for their own websites. There was no significant theme in the Decision stage, however, at an Organisational level, one Club voted for it and another voted against it. This club wanted input from their members on this issue, because they viewed this as

an important issue at their Clubs. In the Implementation stage, there were 13 different themes. The main theme for the Confirmation stage was that the interviewees would continue to use it.

Of the Clubs that were in the Confirmation stage, Figure 55 shows the majority of the Clubs have nominated most of their Administration and Competition personnel as users of the application. The most common users were the Secretaries and the Presidents. Figure 55 shows the results from the surveys for Club Websites.

Stages of Adoption	**Confirmation Stage**						
	Administration					*Competition*	
	President	Vice President	Treasurer	Secretary	Committee	Coach	Player
Christchurch	100%	100%	100%	100%	100%	100%	100%
Geelong	100%	90%	90%	100%	90%	90%	90%
Overall	100%	93%	93%	100%	93%	93%	93%

Figure 55 - The Survey Results for Club Members in the Confirmation Stage for Club Websites in Other Sports Associations

Summary of Results for Club Website

Cricket Clubs have adopted Club Websites at a higher rate than the Other Sporting Clubs. These figures were skewed with a number of Hockey Clubs that 'piggy backed' off their School websites. The level of adoption will depend on the Club itself and the personnel involved in it. They can be encouraged by the Association, or a Governing body, but it will depend on how motivated the clubs are about implementing their own website.

This Internet application is under the control of the club and 73% of Cricket Clubs and 50% of the Other Sporting Clubs are in the Confirmation stage. There were number of the themes related to the use of the club website, like it being a useful tool to disseminate information through the club. Having a Club Website and in turn other ICT applications, in volunteer organisations may not have a commercial benefit, but can be aimed at improving the organisation's ability to share ideas and information to meet social needs (MacKay, Parent, & Gemino, 2004). However implementing a website for a Community Based Organisation (CBO), like a sporting club, is difficult for a number of reasons. The literature suggests that some of the common themes (for CBOs) were not having the skills to be part of the implementation, or requiring extra training (Karanasios, Sellitto, Burgess, Johanson, Schauder, & Denison, 2006). The themes from the interviews suggest this to be true, with a number of the interviewees from the Other Clubs not being part of the initial implementation and the Cricket Clubs requiring more training.

The type of Organisational influence is 'Authority' as the decision to adopt this application mainly came from club Committees and was influenced in some cases by an Institution like the Association or a Governing body. Rogers' (2003) describes 'Authority Organisational decisions' as the choice to adopt, or reject, which is made by a relatively few individuals who posses power, high status, or technical expertise. The major outcome about the Club Website was that adoption of a club website was decided upon by the club Committee or forced by the Association.

10.2.3 Association or Third Party Website

The Association, or Third Party Website, is controlled by the Association. Whether the Association has a Website or not (and whether the website stays current) generally depends on the savviness of the Association's Committee. However, the ability for an Association to use a Third Party provider and have a website incorporated with online statistics has 'muddied the waters' a little.

In hindsight, the researcher regrets the decision to have Association and Third Party Website in the same category. The Third Party Website should have been a fifth Internet application. The reason for this was that a club can access a third party website without the involvement of the Association. This was seen in Colac. However, this was an exception to the rule. Colac aside, grouping the Association Website and the Third Party Website worked for the other Associations investigated.

Only one of the Associations did not implement an Association's Website or a Third Party Website and this was Colac. Although they have 17% of their Clubs in the Confirmation stage, the Association did not implement the website.

Cricket

Figure 56 show this Internet application saw the lowest overall average for all Internet applications. The two leaders of this application were Auckland and North Metro. Figure 56 shows the results from the surveys for Association and Third Party Website.

Stages of Adoption				
	Knowledge	Persuasion	Adoption	Confirmation
Auckland	100%	100%	100%	100%
HCPCL	83%	66%	50%	50%
North Metro	100%	100%	100%	100%
Colac	64%	47%	17%	17%
Overall	85%	77%	65%	65%

Figure 56 - The Survey Results for the Stages for the Framework for Association or Third Party Website in Cricket Associations

Table 60 is a summary from the interviews and shows the main comments about each stage of Innovation-Decision Process.

Table 60 - Overall Framework for Association or Third Party Website Adoption for Cricket Associations

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	**7xFound by Association** -Found out via Cricket Victoria		**5^Association made Decision**	**6^Forced by Association**	2+Less Delegate Meetings ^Forced by Association +Ease of Use +Central Info +Better when Compared to Paper Mail Outs
Organisation	[redacted]				2^Club Gave Up Use ^Not Used For Its Intended Purpose
Individual	2xFound out via Someone at the Club -Found out via Other Clubs	**6+Rel Adv** **6^Trialability** **3+Complex** **3^Observability** 2+Compatibility ^Compatibility ^Relative Advantage +Trialability	+Secretary Made Decision to Adopt	**8+Ease of Use** 2+Used MyCricket for Insurance 2+Used for Results and Information +Results are Posted Online +Player database	**4+Ease of Use** **3+Better Communication** **3+Access to Information** +No Turning Back on the Technology +Used it to Develop Policies ^Not Used For Its Fullest Potential +Ease of Use +Communication Tool +The information is up to date
Other					

This Internet application is generally controlled by the Association. The Association usually maintains the website by controlling competition information for Clubs, such as team ladders and game fixtures. The knowledge about this innovation was mostly revealed directly from the Association or the State governing body to local clubs. At the individual level, two interviewees found out about the website through someone at their club. The interviewees indicated that the *relative advantage* of the Association's Website was the ability to view the ladders and fixtures in real time and not having to wait for them to be delivered by paper mail at the end of the season. Comments relating to *trialability* were the inability to trial the website before the website went 'live'. The decision to adopt this application was generally made by the Association. Except for the Colac Association (which does not have an Association website), the other Associations implemented the website themselves, with four interviewees not involved in the process. In the Confirmation stage, some of the interviewees commented that there were less delegates' meetings and improved communication. However, the Association had the final say about whether or not this innovation was continued.

Figure 57 reveals the average highest users of this application were the Secretaries and the Presidents. No other group of members were above 50%, with no Treasurers using this application. The researcher asserts the reason for this was that Treasurers mainly deal with the accounts of the Club and generally have no interaction with the Association. Secretaries are the representatives to the Association on behalf of their Club and therefore are expected to use the Website. Figure 57 shows the results from the surveys for Association and Third Party Website.

Stages of Adoption	**Confirmation Stage**						
	Administration					*Competition*	
	President	Vice President	Treasurer	Secretary	Committee	Coach	Player
Auckland	71%	42%	0%	57%	57%	71%	71%
HCPCL	50%	16%	0%	83%	50%	50%	50%
North Metro	65%	30%	0%	69%	47%	30%	39%
Colac	0%	0%	0%	100%	0%	0%	0%
Overall	59%	28%	0%	72%	46%	38%	44%

Figure 57 - The Survey Results for Club Members in the Confirmation Stage for Association or Third Party Website in Cricket Associations

Other Sports

The Other Sports that were investigated had an overall average of 81% of their clubs in the Confirmation stage. The main reason for this appears to be that these Associations have used a Third Party system which was implemented as a single package, Association Website and Online Statistics combined. While these packages (in their current form) for cricket have only been around for a few years, they were established much earlier in the Other Sports. The packages are easy to convert and adapt for different types of sports. The advantage for Third Party operators is that they can build one piece of software and then slightly change then to suit other simple scoring sports, like hockey and soccer. The cricket packages need to be custom built and will only work with Cricket. This will be discussed further in Chapter 11. Figure 58 shows the results from the surveys for Association and Third Party Website.

Stages of Adoption				
	Knowledge	Persuasion	Adoption	Confirmation
Christchurch	91%	91%	82%	82%
Geelong	100%	88%	88%	88%
Overall	96%	89%	81%	81%

Figure 58 - The Survey Results for the Stages for the Framework for Association or Third Party Website in Other Sports Associations

Table 61 is a summary from the interviews and shows the main comments about each stage of Innovation-Decision Process.

Table 61 - Overall Framework for Association or Third Party Website Adoption for Hockey and Soccer Associations

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	**7xFound out via Association**		^Association made Decision	2^Association Implemented	+"Have been on Results Vault for a number of years now and and it is a great website"
Organisation	[redacted]			^Not used at Club	+Members use it
Individual	-Found out via Committee member -Found out via Club Secretary	**7^Trialability** **7^Observability** **4+Relative Advantage** **3+Complexity**		2+Used for Checking Ladders 2^Not Involved in the Implementation ^Rarely used +Access to the Website +Has not changed his role (Website always been there) +Ease of use	**3+Information Central** **3+Ease of Information Access** **3+Continued use** 2+Information Diffusion +Information is Available +Unable to Think of a Better way of Diffusing Information
Other					

Like the Club Website disseminating information to its members, an association's website was used to share information to the clubs. The interviewees mainly found out about the innovation via their association. This finding was consistent with the cricket associations. In the Persuasion stage, the *trialability* and *observability* comments centred around them not having trialled it, nor seen it in operation before it was implemented. The Association made the decision to implement the website. The interviewees used the Association's Website for checking team ladders and game fixtures. Judging from the interviewee's comments in the Confirmation stage, this innovation was a success when it was adopted. The interviewees have commented that the information in centrally located on one website, it is ease to access and that they would continue to use it into the future.

The highest users of this innovation, (refer Figure 59), were the Secretaries, followed by Presidents and Coaches. No Treasurers used it in across both associations. These figures are consistent with the cricket associations. The reason for this was the Secretaries are the link between the association and the club and therefore must view their website to keep up to date with announcements from the association. No Treasurers nominated as using the Website. This figure was consistent with the cricket Associations as well. Figure 59 shows the results from the surveys for Association and Third Party Website.

Stages of Adoption	Confirmation Stage						
	Administration					*Competition*	
	President	Vice President	Treasurer	Secretary	Committee	Coach	Player
Christchurch	55%	22%	0%	88%	33%	77%	33%
Geelong	20%	13%	0%	93%	6%	6%	13%
Overall	33%	17%	0%	92%	17%	33%	21%

Figure 59- The Survey Results for Club Members in the Confirmation Stage for Association or Third Party Website in Other Sports Associations

Summary of Results for Association or Third Park Website

These results from the surveys were quite similar, with both types of sports having varied levels of uptake of this innovation, except for the Secretaries that showed a level well above the other positions in relation to website use. In both sports the no Treasurers used this application. This suggests that the type of sport was not a factor in this innovation.

The Association or Third party Website has been implemented within each Association, with the exception of Colac. This application shows many similarities to the Club Website, such as disseminating information to the members from a central location. The Association or Third Party Website (apart from Colac) was generally decided upon and implemented by, the Association. Some of the benefits listed by the interviewees included ease of use, having the information in a central location and providing more efficient communication between the Association and the Clubs. Information and Communication Technologies (ICT) are capable of easing information gaps within the business sector (Diaz, 1997) and can have an important duty in leveraging production and efficiency (Al-Gahtani, 2003). The Association's Website was shown to 'leverage efficiency' by simply reducing the amount of delegate's meetings in one of the Associations. For the Colac Association, there did not seem to be any ICT expertise within the Association and this can be a barrier for ICT adoption. The literature states that if small business (or organisation in this case) has limited ICT expertise, or resources, this can be a barrier for adoption. ICT expertise in the organisation is shown to be important for ICT adoption (Montazemi, 1988; Raymond, 1985).

The type of Organisational decision for this application was mostly 'Authority'. As per the last innovation, the decision to adopt, or reject, this innovation was made by a relatively few individuals who possess power, high social status, or expertise. Compared to the Club Website, where the decision was made mostly by the Club hierarchy, this decision was generally made by the Association's hierarchy. The major themes suggested that the Clubs were not involved in the decision and the Association decided upon it and implemented it themselves.

10.2.4 Online Statistics

The use of Online Statistics have given players access to current statistics. This new world has seen match results and player statistics processed online (and by computers) and freed up volunteers to concentrate on running their clubs (and not process the data manually).

Having match results and player statistics online provides significant advantages to an Association. These include being able to change and update fixtures and ladders instantly and release this information to the Clubs easily and in a timely manner. It also allows them to have computers process player statistics and produce reports to highlight leading scorers. This saves time for the administrators. However, with these significant advantages come significant challenges in adopting them.

The surveys have shown differences between the types of sports..

Cricket

The Online Statistics application has not seen the same adoption rate as the other applications. Only North Metro has seen high adoption rates, with 95% of the Clubs surveyed being in the Confirmation stage. This was followed by HCPCL and Auckland. Colac showed the lowest rate of diffusion for this application. The clubs in the Confirmation stage of the Association Website or Third Party Website application also used the Online Statistics application. These clubs were trying to advance the Association, but were not in a position of power to change the Association's procedures.

The approach of collecting data from different Associations in different countries was designed to highlight any differences in how these countries operated with respect to the Internet applications studied. All of these Associations had access to a free online statistics program that was set up and maintained by the country's governing body. Adding to this, all have ready access to the Internet. However, the results from the surveys suggest that it depends on the Association as to whether the online statistics package is adopted. An example of this is the stark differences between North Metro and Colac. Both of these Associations fall under the same State governing body, with the same opportunities to adopt this application. Figure 60 shows the results from the surveys for Online Statistics.

Stages of Adoption				
	Knowledge	Persuasion	Adoption	Confirmation
Auckland	100%	100%	71%	71%
HCPCL	100%	92%	75%	75%
North Metro	100%	100%	95%	95%
Colac	88%	64%	17%	17%
Overall	97%	88%	67%	67%

Figure 60 - The Survey Results for the Stages for the Framework for Online Statistics in Cricket Associations

Table 62 is a summary from the interviews and shows the main comments about each stage of Innovation-Decision Process.

Table 62 - Overall Framework for Online Statistics Adoption for Cricket Associations

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	**10xFound out from Association**		**4^Association made Decision**	**4^Forced upon by Association** +Statistics are Online	^Made to by Association
Organisation	[redacted]			+Generated Another Revenue Stream with Fantasy Competition +Building Value for Yearbook	+Less Statistic Processing
Individual	2xWant to move to an online system -Wants the Association to Implement it	**5^Trialability** **4+Complexity** **4^Observability** **3+Relative Advantage** **3+Trialability** ^Complexity +Observability	+President of Club wants to put stuff online	2+Ease of Use 2^Training others to use ^Organising logins of other +Unchanged Club Administration +Automated Processing of Statistics +Instant access to results ^New Duty as Vice Captain to Input the Scores Online +Do not need to use Excel Spreadsheets +Ease of Access to Results +Better way to ret scores to Association	**3+Less Statistic Processing** **3+Statistics Online** **3+Ease of Use** +Instant access to results +Ease of Access
Other					

This Internet application requires additional external support from, the National governing body, the state governing body, a third party operator, or a mixture to operate effectively. As a sport, cricket needs software that is custom built. All of the National governing bodies in Australia, New Zealand and the United Kingdom, have taken it upon themselves to set up these online statistics systems for their clubs and Association. There are third party systems that offer a similar product, however they are user pays systems. Ten interviewees found out about the application through their Association and one interviewee did not know that this type of Internet application existed. The major theme in the Persuasion stage was not being able to *trial* the innovation. The Association made the decision on four occasions, with one Association not having implemented it. This application was implemented via a third party system, either through the national governing body, or by a third party operator. The individuals that were interviewed enjoyed having the statistics online and also commented on the ease of use of the applications. This Online Statistical application has moved beyond the realms of just providing statistics to include functions that allows integrated websites, the collection of email addresses and even value added developments such as a fantasy competition.

Figure 61 illustrates that on average the most common users are the Secretaries and the Players. Generally, the Secretaries and/or Team Captains enter the statistics and Players views the match scores and player statistics. Figure 61 shows the results from the surveys for Online Statistics.

Stages of Adoption	**Confirmation Stage**						
	Administration					*Competition*	
	President	Vice President	Treasurer	Secretary	Committee	Coach	Player
Auckland	42%	28%	0%	0%	28%	57%	57%
HCPCL	44%	44%	55%	77%	66%	66%	55%
North Metro	43%	30%	43%	65%	43%	30%	47%
Colac	0%	0%	33%	33%	0%	0%	33%
Overall	43%	33%	43%	60%	45%	43%	53%

Figure 61 - The Survey Results for Club Members in the Confirmation Stage for Online Statistics in Cricket Associations

Other Sports

Overall, 63% of the Other Club's surveyed used an Online Statistics package. However, the circumstances surrounding these procedures differ between the three types of sports. At a local level, Cricket matches are not guaranteed an umpire present on match days and due to the complex scoring nature of the sport, the onus is on clubs to input the scores. However, with Hockey and Soccer, each match has a umpire who has the duty to collect and enter the scores. Figure 62 shows the results from the surveys for Online Statistics.

Stages of Adoption				
	Knowledge	Persuasion	Adoption	Confirmation
Christchurch	82%	82%	54%	54%
Geelong	100%	70%	64%	64%
Overall	93%	74%	63%	63%

Figure 62 - The Survey Results for the Stages for the Framework for Online Statistics in Other Sports Associations

Table 63 is a summary from the interviews and shows the main comments about each stage of Innovation-Decision Process.

Table 63 - Overall Framework for Online Statistics Adoption for Hockey and Soccer Associations

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution	**7xFound out via Association**		2^Association Made Decision		
Organisation		**3+Relative Advantage**		2+Post Results Around Club Rooms	
Individual	2xFound out via Secretary	**5^Trialability** **3+Complexity** 2^Observability +Observability		2+Rarely Used +Feels More Professional with Statistics +Up To Date Results Online +Statistics Very Accessible +Ease of Use	**5+Access to Info** **4+Ease of Use** **4+Continued Use** +Planning +Cannot image it another way +Association's Decision +"Good Having it Online" +Standard (having Statistics Online) These Days
Other					

The interviewees found out about the innovation from the Association. In the Persuasion stage, the comments relating to *trialability* concerned not being able to trial the innovation before it was implemented. The only comments relating to the decision were that the Association chose to adopt the Statistical package. The main benefits were about how the interviewees accessed the information, ease of use and the continued use of the innovation.

Figure 63 shows the highest users for this application were the Secretaries. Like the Association Website, the Secretaries must be aware of match results, player results, ladders and fixtures as they might be in charge of inputting these statistics. Figure 63 shows the results from the surveys for Online Statistics.

Stages of Adoption	Confirmation Stage						
	Administration					*Competition*	
	President	Vice President	Treasurer	Secretary	Committee	Coach	Player
Christchurch	83%	66%	66%	83%	33%	100%	83%
Geelong	46%	46%	46%	100%	46%	46%	46%
Overall	59%	53%	53%	94%	41%	65%	59%

Figure 63 - The Survey Results for Club Members in the Confirmation Stage for Online Statistics in Other Sports Associations

Summary of Results for Online Statistics

The overall results for online statistics showed that Cricket has a slightly higher percentage of Clubs in the Confirmation stage that the Other Sports category, even when factoring in the Colac results.

There may be numerous reasons for this; however the simplest one may be to do with the level of statistical involvement for each type of sport. As Cricket is considered to have a complex scoring system, players will have their playing statistics recorded. The Other Sport category had very limited statistics recorded and therefore it is much harder to compare players with statistics when generally the only individual statistics recorded are goals scored.

The adoption of this application is the most complicated to explain. Starting with the Cricket Association, three of the associations have implemented it and Colac having not. Generally the Associations made the decision to implement Online Statistics and the interviewees said the benefits were less data to process, having the statistics online. The literature explains that ICTs can perform high speed, high volume and numerical computations. It also provides fast, accurate and inexpensive communication within and between organisations (Turban, Leidner, McLean, & Wetherbe, 2006). These Online Statistical programs are designed to do just that, process this data quickly into meaningful information. However as there have been lower adoption rates, compared to email for example, this shows that these CBOs have generally had trouble successfully implementing ICTs (Montazemi, 1988; Raymond, 1985). CBOs face limitations with respect to their use of ICTs (Karanasios, Sellitto, Burgess, Johanson, Schauder, & Denison, 2006).

The 'other' sports have a lower than expected use of these Online Statistical packages once they had been adopted by the Associations. Player Statistics may be a lower pritority in these simple scoring sports as only a few players actually generate statistics (usually the goal scorers).

The Organisational type of decision was generally 'Authority' in five of the six Assocations. The other Association was Colac. The innovation was not be decided upon by the Association, but by a number of Individuals independently and therefore the type of Organisational decision was 'Optional' to an extent.

The next section will discuss the major themes from the two types of sports.

10.3 Comparing the Major Themes across Internet Applications

This section compares the major themes adoption across the Internet Application and will describes how adoption was driven. Only the major themes have been used in this section. The themes are considered to be 'major' if they were repeated three times or more for Cricket and two or more for the 'Other' sports. However, one distinction that needs to be made is the level of themes needed to create a 'major' theme. As there were four Cricket Association analysed, compared to the two 'other' sporting Associations, there are roughly about half of the interviews conducted for the 'other' sports. To be are considered to 'major' for Cricket, a comment needed to be repeated three times or more. However, this amount was not yielding enough themes for the 'other' sports. Therefore, it has been lowered to two comments for this section. The section is broken down into the types of sports with Cricket in the first part and Other Sports in the next section.

10.3.1 Cricket

This section summarises the themes for each Internet application in Cricket.

Email

Email adoption for Cricket Associations generally was championed at an individual level. Normally the Knowledge about email was gained by the Club member using it at either home or work. In the Persuasion stage, the majority of comments related to *trialability* and these members were first to use email either at home, or at work, before using it at the Club. The *relative advantage* of using email

was that it was quick to send messages, left a paper trail and was easy to understand. However, one of the shortcomings was that, for some users, all the members at the Club needed to have an email account they accessed regularly. The decision to adopt email was made by members of the administration. After implementation, email was found to be easy to understand for some and required more training for others. All of the interviewees have suggested the Club will continue to use email, as it is easy to use, convenient and low cost. Table 64 shows the overall framework for email.

Table 64 - Overall Framework for Email Adoption for Cricket Associations

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
	Email				
Institution	3xFound out via Association				
Organisation					
Individual	6xFound out via work	12+Trialability 7+5^Relative Advantage	6+Members of the Administration	5+Ease of Use 4^ Extra Training needed	9+Ease of Use 3+Convenient 3+Cost
Other					

Club Website

The adoption of the Club Website application was generally influenced at an Individual and an Organisational level. Generally the knowledge about Club Websites was acquired by either the State Governing body, or from other Cricket Clubs. In the Persuasion stage, the *relative advantage* of Club Website was to more easily provide information from the Clubs Administrators to the Club's members and to provide a central location to store this information. The *observability* was generally experienced though looking at other sporting Clubs' Websites and the negative *trialability* comments were because they did not trial the Club Website before it went live. The decision to adopt the Club Website was generally made by members of the Clubs' administration. After the website was implemented, the Webmaster administered it and also more training was required. The interviewees suggested that, once adopted, its continued use is assured. Table 65 shows the overall framework for Club Website.

Table 65 - Overall Framework for Club Website Adoption for Cricket Associations

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
	Club Website				
Institution	3xFound out via Cricket Victoria				
Organisation		4+Relative Advantage		3+Webmaster manages it	3+Player Feedback 3+Website Traffic
Individual	4xFound out from other Clubs	9+Observability 7+Relative Advantage 4^Trialability 3+Compatabilty 3+Complexity	3+Members of the Admin	3^Extra Training needed	3+Communication tool
Other					

Association or Third Party Website

This application should be the duty of the Association and their role is to implement and maintain it. The interviewees found out about the Association or Third Party Website through the Association. In the Persuasion stage, none of the interviewees had a chance to *trial* it, or *observe* it, before it went live. However, some of the themes for the *relative advantage* were the ability to view the team ladders and game fixtures in real time and not have to wait for them to be delivered via traditional paper mail. Adding to this was the advantage of having information in a central location. The decision to implement this application was made by the Association and it was also implemented by the Association. The interviewees also commented about how easy it was to use. This application will have continued use as it provides better communication and easier access to information. Table 66 shows the overall framework for the Association or Third Party Website.

Table 66 - Overall Framework for Association or Third Party Website Adoption for Cricket Associations

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
	Association or Third Party Website				
Institution	7xFound by Association		4^Association made Decision	6^Forced by Association	
Organisation					
Individual		6+Relative Advantage 6^Trialability 3+Complex 3^Observability		8+Ease of Use	4+Will Continue to use it 3+Better Communication 3+Ease of Use 3+Access to Information
Other					

Online Statistics

Like the Association or Third Party Website, most of the influences came from the Organisational or Institutional level. The interviewees stated that the knowledge about Online Statistics was received via their associations. In the Persuasion stage, some of the interviewees had a chance to *trial* it through training, while others did not. Some of the *relative advantages* of this application were the having the statistics online and the ability to access them anywhere. The decision to adopt and actual implementation was managed by the associations. However, this implementation would involve configuring a current system to meet their needs, not developing a new system from scratch. In the Confirmation stage, the interviewees commented about its ease of use, having the statistics online and spending less time manually calculating statistics. Table 67 shows the overall framework for Online Statistics.

Table 67 - Overall Framework for Online Statistics Adoption for Cricket Associations

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
	Online Statistics				
Institution	10xFound out from Association		4^Association made Decision	4^Forced upon by Association	
Organisation					
Individual		5^Trialability 4+Complexity 4^Observability 3+Relative Advantage 3+Trialability			3+Less Statistic Processing 3+Statistics Online 3+Ease of Use
Other					

10.3.2 Other Sports

From the interviews with the 'Other' Sporting Associations, the major themes for each application have been incorporated into the summary research frameworks.

Email

As with cricket, email was generally championed at an individual level for 'other' sports. The interviewees generally found out about the innovation through using email in their workplace and through personal use. In the Persuasion stage, the main themes were *relative advantage* and *trialability*. The *relative advantage* of using email, as suggested by the interviewees, were the ability for the application to send communiqué quickly and at a low cost. The *trialability* of email, related to how they trialled this application through using it at work and at home before using it at the club. There was no obvious theme as to who made the decision to adopt this application. When implementing this application, the major themes were more centred about better communication at the Organisation level. The interviewees commented that email was used to communicate within committees. The Interviewees all agreed their clubs would continue to use email into the future, as it provided them an easy option to send out quick messages, which saves them time. Table 68 shows the overall framework for email.

Table 68 - Overall Framework for Email Adoption for Hockey and Soccer Associations

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
	Email				
Institution				2+Association sent out emails	
Organisation	[redacted]	2+Compatibility		5+Information Diffusion 2+Less phone calls 2+Committee Started Sending out Emails 2+Communicate with Committee	2+Ease of Communication
Individual	6xFound out via Personal use 5xFound out via Work	9+Relative Advantage 9+Trialability 5+Complexity 2+Observation 2^Observation		2+Sent email within committee	2+Ease of use 2+Saves time 2+Fast and Instant Communication
Other					

Club Website

This application was influenced at the Individual and Organisation levels. This was similar to the cricket results. The main source of knowledge for this innovation was through a member within the clubs. In the Persuasion stage, the *relative advantage* of using this innovation at an Organisation level was the ease of sharing information with their members and to 'keep up with the times'. Some of the Committee Members wanted to ensure they were keeping up the latest use of Internet applications and this was a reason to adopt this application. At an individual level, the major themes were *complexity* (or lack thereof), and *observability*. The comments regarding the *complexity* were centred on the idea that the concept of the Club Website was not difficult to understand. The comments concerning the *observability* of this innovation were generally that the interviewees had observed the websites of other clubs. There were not any major themes relating to the Decision stage, however there were a number of unique comments regarding this stage. The major themes from the interviews in the 'other' sports category showed that there was a major theme about the interviewees not being involved in the implementation. Like the Decision stage, there were numerous unique comments regarding this stage. The interviewees have commented that in the Confirmation stage, their Clubs would continue to use their Website, as it provides them with an easy way to diffuse information in a central area, while also creating efficiency gains with the time and effort it takes to diffuse this information. Table 69 shows the overall framework for Club Website.

Table 69 - Overall Framework for Club Website Adoption for Hockey and Soccer Associations

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
	Club Website				
Institution					
Organisation	[redacted]	2+Relative Advantage			2+Committee has seen advantages 2+Main Tool of Information Diffusion
Individual	3xFound out via Committee Member	5+Complexity 4+Observability			3+Will Continue its Use 2+Efficient Gains
Other	2xUnknown				

Association or Third Party Website

This innovation was, like cricket, influenced by the Association. The knowledge of the Association or Third Party Website was given to the interviewees by the Association generally through emails and delegates meetings. In the Persuasion stage, the interviewees commented they did not have prior access to the website and therefore did not have the opportunity to *trial* it, nor *observe* it before it was implemented. The comments the interviewees made regarding the *relative advantage* of the website were about how it gave them access to information that they would normally be telephoning the Association about, such as when the next delegate meeting occurred and clarification of rules and by-laws. The major theme in this stage was the lack of difficulty in understanding how emailed worked at a basic level. This decision to adopt this website was undertaken by the Association. This result was the mirrored in cricket as well. It was clear from the comments made by the interviewees, that the associations implemented these Websites. There were some of comments about how the Website was being used. This generally involved checking match results and game ladders. Ultimately, continued use relies on the Association, however, the interviewees all made positive comments regarding the Association's Website. The comments were about the advantages of having the information in a central location and the ease of accessing this information. Table 70 shows the overall framework for Association or Third Party Website.

Table 70 - Overall Framework for Association or Third Party Website Adoption for Hockey and Soccer Associations

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
	Association or Third Party Website				
Institution	7xFound out via Association			2^Association Implemented	
Organisation					
Individual		7^Trialability 7^Observability 4+Relative Advantage 3+Complexity		2+Used for Checking Ladders & Fixtures	3+Information Central 3+Ease of Information Access 3+Continued use 2+Information Diffusion
Other					

Online Statistics

This innovation was generally influenced at an Institutional and an Organisational level. However the power to decide and implement the Online Statistics package is mostly with the Association. The comments regarding the Knowledge stage showed most of the interviewees found out about this innovation through the Association. As the Association Website and the Online Statistics are different components of the same website, the promotion of this website was through the same means as the Association's Website. In the Persuasion stage, the interviewees commented that the *relative advantage* of the Online Statistics package was that player administration was easier at the Club level. As was seen with the Association's Website, the interviewees did not have a chance to *trial*, nor *observe* the Online Statistics package before it was introduced. Much like the Association's Website, the Association made the decision to adopt this application. The Association also implemented the innovation, to a certain extent. As the application was already built by a third party, the Association needed to customise it for their needs. In the Confirmation stage, the interviewees commented that they liked the online access to statistics (generally match results, ladders and fixtures) and thought it easy to use. They also said they would continue to use the innovation into the future, bearing in mind it is the Association who will determine if the online package would have continued use. Table 71 shows the overall framework for Online Statistics.

Table 71 - Overall Framework for Online Statistics Adoption for Hockey and Soccer Associations

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
	Online Statistics				
Institution	7xFound out via Association		2^Assocation Made Decision		
Organisation		3+Relative Advantage		2+Post Results Around Club Rooms	
Individual	2xFound out via Secretary	5^Trialability 3+Complexity 2^Observability		2+Rarely Used	5+Access to Info 4+Ease of Use 4+Continued Use
Other					

10.4 Summary

This discussion chapter explains 'how' and 'why' each of the Internet applications were adopted. The discussion of the applications have shown that email was generally influenced by individuals and became an collective decision to adopt. The Club Website was generally influenced mostly at an individual level, however there were a number of cases of Organisational influence. This innovation was generally considered an authoritive decision. In regard to the Association Website or Third Party Website, the major influence was the institution and was an authoritive decision to adopt. Lastly, for the Online Statistics application, the major adoption influence for this innovation was at both institutional or organisational levels and the organisational decision type was Authoritive. Table 72 summarises these findings.

Table 72 - Summary of Internet Adoptions

Internet Application	Sport	Major Influence	Major Organisational Decision Type (Rogers, 2003)	Major User	Overall Percent of Clubs in Confirmation Stage
Email	Cricket	Individual	Collective	Secretary (83%)	83%
	Other Sport	Individual	Collective	Secretary (96%)	93%
Club Website	Cricket	Individual/ Organisational	Authority	Secretary (73%)	73%
	Other Sport	Individual/ Organisational	Authority	President/ Secretary (100%)	93%
Association or 3rd Party Website	Cricket	Institutional	Authority	Secretary (72%)	65%
	Other Sport	Institutional	Authority	Secretary (92%)	81%
Online Statistics	Cricket	Institutional/ Organisational	Authority	Secretary (60%)	67%
	Other Sport	Institutional/ Organisational	Authority	Secretary (94%)	63%

11 Chapter Eleven – Conclusion

11.1 Introduction

This is the final chapter of this thesis. Firstly, the aims of the thesis and the research questions are re-examined. After this, the final version of the research framework, which forms the main theoretical contribution to knowledge, is presented. The practical implications and the significance of the research are presented, along with an 'ideal' setup of Internet applications for local sporting Clubs and Associations. The generalisability of the results is examined, as is the suitability of the research framework as an instrument to investigate the adoption of Internet (and other ICT) innovations in other sports and community based organisations. The last section of the chapter contemplates the areas of future research.

11.2 Literature Gap

Local sporting clubs are part of a larger group known as Community Based Organisations (CBOs). The CBO sector relies greatly on volunteers to support their activities. There are significant differences in how different CBOs adopt and use information and communication technologies (ICTs), of which Internet applications are a subset, when compared with private enterprises. In fact, there is a mismatch in the amount of research conducted in this sector compared to commercial sectors. This is especially the case in relation to the use of ICTs that were investigated (for local sporting clubs) as part of this study (Hall & Banting, 2002). The use of ICTs in organisations relying on volunteers does not necessarily have a commercial benefit for the organisation, but is aimed at improving its ability to share ideas and information to meet social needs (MacKay, Parent, & Gemino, 2004). This was shown to be correct for this study. Very few studies investigate the role of ICT and volunteers (Boyle, Macleod, Slevin, Sobecka, & Burton, 1993; Madon, 1999; Morgon, 1995). Although there is research examining Internet adoption in general, this cannot necessarily be generalised to small CBOs and their volunteers, nor local sporting clubs or their members. Therefore, more specific research (such as this study) is needed to investigate implications of these significant differences (MacKay, Parent, & Gemino, 2004). This study is an example of such research.

11.3 Research Questions Re-Visited

This research has developed a research framework which has addressed the research questions:

- What are the areas where Internet applications are being employed (Research Question 1);
- What are the factors that drive the adoption of these Internet applications (Research Question 2); and
- What impact do these Internet applications have on the local sporting club and its members (Research Question 3).

Initially, the research framework, which was mainly based on the Rogers' (2003) Innovation-Decision process, was developed from the literature. This research framework was tested and refined with six sporting associations ('cases') employing two concurrent data collection phases. The first phase involved a survey which examined the extent of Internet application adoption and the second phase involved interviews that indentified the factors that affected their adoption. Three different sports and three different countries were represented in the data collection.

The three sports that were investigated were Cricket, Hockey and Soccer. These sports are extremely popular throughout the world. The international governing bodies of these sports have many member nations involved in their structure. A member nation is a nation which has the sport played in their country and is a member of the world governing body of the sport.

Cricket is a unique sport that is popular around the world. The game originated in England and was introduced throughout the world as the British Empire expanded (Kirsch, 1989). Hockey is thought to be one of the oldest sports in the world. 'Hockey like' games involving sticks and balls have been called 'paganica' (Romans), 'hurling' (Irish) and 'shinty' (Scottish) and have been played for thousands of years. (Department of Immigration and Citizenship Australia, 2006). The expansion of Soccer throughout the world has seen it become the ruling sporting passion in Europe, Latin America, most of Asia and virtually all of Africa. However, other than England, most other English speaking counties do not have Soccer as their dominate national sport (Murray, 1996).

With the dawn of Information Age, computers and the Internet have been harnessed to improve efficiencies in local sporting organisations. The Internet applications that were investigated were Email, Club Website, Association or Third Party Websites and Online Statistics Packages. Cricket was compared against Hockey and Soccer. Hockey and Soccer are seen to be simple scoring sports. Generally the only statistics kept on these sports, at a local level, are goals and who scored them. The next section goes on to examine the extent of adoption of the Internet applications in local sporting bodies and the factors that affect all stages of adoption.

11.3.1 The Extent of Internet Application Adoption in Local Sporting Clubs

Email is an Internet communication tool which allows the user to send out electronic messages to either one person or many people instantly (although they are not receiving the message until the recipient(s) check their email account). The results from the surveys suggested that that the application is widely adopted through the investigated associations. Five of the associations had at least 88% of their clubs in the Confirmation stage. Most of the interviewees had become familiar with email at work or through personal use before they used it at their Clubs. The adoption of email was generally influenced at the Club and individual level.

The Club Website is a vehicle for disseminating large amounts of information from a central area for members to view at their leisure. The data from the surveys showed that three of the Associations had 75% or more Clubs in the Confirmation stage. This innovation can be more technical to implement for Clubs than the other three innovations, as it can require a person with some website expertise to set it up. However, the Club Website can provide useful benefits for the amount of effort that is required for it. In conjunction with Online Statistics provided by Third Party Websites, all of the clubs in the study had an opportunity to implement a simple, template driven, website. However as a club in the Colac Cricket Association found, implementing a website is one thing, maintaining it is another. For this innovation to be effective, it must stay current. Two streams of information can be diffused on a Club Website. These are club information and match information. Club Information involves notifications from the Club Administration, for example about club functions or membership. Match information is generally the information about matches, such as game fixtures, team ladders and match results. Match information can be automatically populated through a Club Website by it being integrated with the Association or Third Party Website. This is discussed later in this chapter.

The Association or Third Party Website is a central area for diffusing information from associations to their Clubs. The results of the surveys had shown that four of the Associations have at least 82% of their Clubs in the Confirmation stage (using the Association Website). One of the associations had 50% of clubs using their Website (Home Countries Premier Cricket League), Colac did not have an Association Website. The researcher views this innovation as an important tool for associations and one that, when maintained, can save the Association administrator a great deal of time. When this innovation is implemented correctly it becomes a central location for club administrations to access information from the Association in a current and timely manner. When clubs have access to this

information online, the time taken with personal interactions between the club and the association was reduced. The real benefits are likely to be been seen in larger Associations. Interestingly, the Home Countries Premier Cricket League (HCPCL) is a very large Association, yet they have the lowest rate of users for this innovation. There may be a number of reasons for this, however the interview results suggest that this association uses email as the main form of communication with their clubs. Although having an Association Website is a good communication channel, the HCPCL has not embraced it.

Online Statistics requires assistance from governing bodies or third party operators to implement it. However, it also requires a level of support by the associations for clubs to adopt it. All of the associations have access to a free online statistical package and five of the six Associations have implemented it efficiently. Colac Cricket Association was the only association not to implement it in an effective manner. Instead of this Association using Online Statistics for its intended purposes (as a statistical package), its only use was that clubs were registering with the website to access inexpensive player liability insurance. However, for the software to work as it was designed, the Association must make an *authoritative decision* about its use. The adoption of this innovation was different between the two types of sports. Cricket requires custom built online management software that cannot be easily modified and used by other sports. This is in comparison to software which can be developed and used for one sport; say Hockey and then slightly modified for other similar scoring structured sport like Soccer. The advantages of this 'cross over' software is that it can be used across multiple sports and have cheaper development costs.

11.3.2 The Factors that Drive the Adoption of Internet Applications

The factors which have affected adoption of the Internet applications investigated in this study have been identified as individual, organisational, or intuitional.

Individual

The Individual influences that have affected adoption originated from club members. These can be club members serving on a Committee, or someone seen as an 'expert' in the area. An 'expert' may be a member of the Club who is particularly knowledgeable in a certain area and given the opportunity to use this knowledge initiate the innovation. The results from the interviews suggested the Internet applications that were mainly influenced by the individual were Email and the Club Website.

Organisational

An organisational influence can affect adoption when the interests of the Clubs are considered; an example may be when email provides improved communication for members. In the framework, the exception to this rule is in the Knowledge stage, where an organisation cannot gain Knowledge, Individuals provide it. The results of the interviews suggested the Internet application which was mainly influenced by the Organisation was the Club Website.

Institutional

The institutional influence on the adoption of an innovation was generally the Association, the State and/or National Governing body. These bodies provided services that either diffused information to the Clubs, like training courses, or helped them run more efficiently, such as providing an Online Statistics package. Some examples of the Internet applications the Institution had an influence over were the Association's Website and the Online Statistics package.

11.3.3 Types of Innovation-Decisions

When an organisation makes a decision to either adopt, or not adopt, an innovation, the type of decision made will be one of three different categories. Rogers (2003) categorises these types of innovation-decisions into three types: Optional, Collective and Authority.

Optional Innovation Decisions

The optional innovation decision is the decision to adopt or reject an innovation made by the individual which is independent of the decision by other members of the system. An example of this from the study has been when a member makes an individual decision to use email to communicate with other club committee members.

Collective Innovation Decisions

A collective innovation decision is the decision to adopt or reject an innovation made by consensus among the members of the system. An example of this in this study was when a club decided to vote at a members' meeting on whether to adopt a club website.

Authority Innovation Decisions

An authority innovation decision is the decision to adopt or reject an innovation made by relatively few members in a system that have power, high social standing, or expertise. An example in this study was when a Committee have made a decision, such as to adopt a Club Website, Association Website or Online Statistics.

11.4 Theoretical Contribution

The principle contribution to knowledge this study has made is the development of the research framework that extends Rogers' (2003) Innovation-Decision Process by adding influences that affect each stage of the process. The implications of the research framework and its generalisability are discussed below.

11.4.1 Final Research Framework

After the first round of data collection was analysed, it was obvious the initial framework proposed did not easily allow the results to be classified. However, this was expected as it was an initial research framework developed from the literature. Then, an adapted version of the framework was developed and explained the results of the Auckland Cricket Association. The test of the research framework was how it would perform during the second round of data collection. The research framework allowed for classification of the factors that affected all stages of the adoption and implementation process in a much more complete manner. The final research framework which was developed in this thesis is illustrated in Table 73. This final framework allows the influencing cultures associated with the innovation adoption to be associated with the different stages of Rogers (2003) Innovation-Decision Process.

Table 73 - The Final Research Framework

Innovation-decision Influences	Innovation-Decision Process				
	Knowledge	Persuasion	Decision	Implementation	Confirmation
Institution					
Organisation					
Individual					
Other					

11.4.2 Generalisability

This research has developed a theoretical framework that examined local sporting bodies. However, the idea of whether the framework will be generalisable to other Community Based Organisations (CBOs) will be investigated in future research. This research framework has been tested across three different sport, and across the different countries. The researcher anticipates the framework will realistically be generalisable to CBOs which have members and are members of an Association or Governing Body. The research framework could also be applied to other technology innovations which local sporting clubs might adopt, like social media websites.

11.5 Practical Implications and Significance

The results of this research will be useful to many people associated with sporting bodies. This section discusses the practical implications of the research. This is followed by recommendations to local sporting bodies regarding the four Internet applications investigated and future Internet applications that may emerge. These recommendations were formed on the basis of the findings from the data collection and the literature from chapter 2, 3 and 4.

11.5.1 Practical Significance

The research has wide ramifications for a number of sports and their volunteers. The Internet is an established technology and certain applications have been developed to improve efficiencies associated with information provision and communication. These Internet applications are being adopted by volunteer organisations. Nevertheless, the importance of this research was to identify the 'how' and 'why' these applications are being adopted in local sporting bodies and at a practical level, how to make the adoption process more effective and efficient.

The people who manage and administer the Clubs and Associations are generally all volunteers. The following practical recommendations of this chapter advises the volunteers on how to use these Internet applications within their Associations. This practical guide is also included so hopefully they do not repeat the mistakes of other sporting Associations as highlighted in this study. The guide has been developed after careful consideration of the following;

- The benefits of use of ICTs and the Internet as highlighted in sections 2.3.1 - Benefits of Information and Communication Technology, and 2.4.2 - Benefits of the Internet of this thesis,
- The results obtained during the conduct of the thesis, and
- Practical experience gained by the researcher through his role as Secretary of a local Australian Cricket club in the previous four years.

11.5.2 An 'Ideal' Internet Setup for Clubs and Associations

The Internet can be a powerful tool, as Rogers says,

"The rate at which the Internet speeds up the diffusion process in some cases is illustrated by Internet viruses, which can travel worldwide in a day or two. Clearly, the world in which we live today is a different one than that of sixty years ago, when study of the diffusion process began." (Rogers, 2003, p. 216)

This quote from Rogers himself showed how quickly the diffusion process can change clubs and club administration in this age of information.

In the sporting world, governing bodies are made up of member nations where a particular sport is played. The countries which were investigated are all members of their particular World governing body. The International Cricket Council (ICC) has 104 members (International Cricket Council, 2010), the International Hockey Federation has 127 member countries (International Hockey Federation, 2011) and the governing body of Soccer, FIFA has 202 member countries (FIFA, 2004). The thesis has the potential to improve many of these volunteer activities within these countries.

This next part of the chapter describes how certain Internet applications should be implemented within Clubs and Associations.

The 'Ideal' Internet Application Setup for Sports

The complexity and uniqueness of recording match results and in depth player statistics for cricket, makes the Internet and computers the perfect vehicle to process this data. Then make this information readily available to view online. However, custom software needs to be developed to suit these needs. There are marked differences between cricket and the two 'other' sports. However, the administration structures are quite similar. Due to these similar structures, there will be a certain amount of overlap between the different types of sports. The next section of this chapter outlines how the Internet applications should be adopted. Presented are the 'ideal' setup and procedures that Clubs and Associations can utilise with these four Internet applications. The emerging technologies of social networking and mobile technologies will be discussed later in this chapter.

The Club

A sporting club is made up of members that are administered by a committee. This committee has been given the privilege to manage the club as it sees fit for the entire season. However with the digital age upon us, there are new ways the club can communicate with their members, the association and internally. The hockey and soccer clubs were generally administered in the same manner as cricket clubs, with volunteers assuming administration positions. As stated before, this is the digital age, Clubs have more tools than ever before to communicate and process their data.

Email

Before the use of email, the method of contacting players was through the use of telephone calls and paper mail. These methods are very time consuming and costly. Since the mass adoption of email, sporting clubs have been using it to communicate to the association, from within the committee, from the committee to players and from the club to the outside world. These are the four channels of communication a Club must master.

Communication from the Association to the Clubs

Communication from the association to the clubs generally occurs through the Club Secretary. The surveys have shown (except for the Colac Cricket Association) that of the clubs in the Confirmation stage, over 80% of these Clubs indicated that their Secretaries use email. The secretary represents the club on behalf of the Association. Therefore, it should be commonplace for the secretary to be emailed by the Association. Another channel for communication from the Associations to the club, is via the Association Website (this will be discussed later).

Communication within the Committee

The survey results have shown most of the members in the executive committee have an email account. This seems to be the preferred method of communication from within the executive committee. During the interviews, the delegates said the benefits of using email were initially seen at

work or personal use and then incorporated into their Clubs. Email is a great communication tool which should be the preferred method of communication within the committee.

Communication from the Committee to their Players

The use of email throughout a sporting club is almost the perfect form of communication. It has the attributes of a written letter, however it is instant and can be sent to a mass audience at generally no cost to the Club. However, the problem that email has, which was shown during the interviews, is that not everyone has an email account. This creates the problem of some members not receiving the message. A school of thought on this is that is if the majority of people receive the message, the committee has preformed their duty in communicating the message. However, there are now better ways to communicate from the committee to the playing group. A more inclusive method of communicating to the playing group is through mobile phones and SMS messaging. These messages can be sent to the playing group instantly and at a low cost (but is more expensive then email). The most practical use of this method is generally through reminders about club functions and payments of memberships. However, when sending out a message to 35 people (generally the number of players in a cricket club of three teams), costs will be around $4. Nevertheless, the problem, like the other forms of communication, is keeping an up to date database of the players' records. One feature that is being integrated into the third party websites, such as MyCricket, is an SMS messaging feature that is linked to a player directory. However, at the moment, the cost of sending an SMS message via this service is still quite expensive compared to a club buying a pre-paid SIM card. One other method of communication is the humble phone call. This is still a viable option for communication and does have its place. The researcher suggests that the use of the phone calls should be limited to one-to-one conversations, that require a decision to be made in a relatively short amount of time. For instance, if a player is required to perform a duty on match day, the odds are they will not be checking their email before the game. This is where a phone call is superior to email. An interview from one of the clubs at HCPCL suggested that a phone call was much better during the morning of a match as the caller knows the player received the message.

A Club Email Account

The recommendations on whether a club should have a dedicated email account should be made on a case by case basis. On the one hand, email can be the central point of communication for all of the club matters. However, this becomes a 'people' issue in regards to the use of this Internet application. If the person who is in charge of the account, namely the Secretary, is workshy in accessing the email account, the club should enforce a 'forward on' approach. This involves forwarding on all communications from the Club email account to the Secretary's own personal/work account. This way the emails are at least read, and in turn, responded too. This will prove to be important, particularly during the off-season. On the other hand, if the club does not want a dedicated email account, it needs to supply the email address of the Secretary. The major problem with this is when the Secretary is replaced, the email address must be change from to the old Secretary's account to the new Secretary's account in all places it is used. This may be time consuming and require a list of places the email address is used.

Club Website

A Club website can be a useful tool for diffusing information to members, recruiting members and adding value for clubs sponsors. However, there are a number of ways this innovation can be used successfully. The club website can be integrated into an online statistics program; or be a standalone website. The use of these types of websites did not substantially change when comparing sports. However, one difference is the 'other sports' are using a third party operator to manage their Clubs'

Websites, the Association's Website and their Match Statistics. This is compared to cricket, which has recently employed these kind of systems, namely MyCricket and PlayCricket. The researcher has identified four categories of websites that Clubs can adopt. These categories are Stand Alone Dynamic Websites, Stand Alone Static Websites, Integrated Dynamic Websites and Static Websites.

Stand Alone Dynamic Website

A Stand Alone Dynamic Website is a website that is not linked to any existing statistical website, and is continually changed by a representative of the club. This website will contain key club information, such as news and upcoming events. It also becomes a place that can be referred to as the central source of information. When announcements of events are made at the Club, the website can be referred to as a source for information about the event. The advantage of this kind of website is that the club has full control over the look and content of the website (as it is not template driven). However, the disadvantage is that there needs to be a certain level of expertise within the club to implement and maintain the website. This can be quite 'hit and miss' in a Community Based Organisation. Also, this website is not integrated with the Online Statistics Package and therefore will not display ladders, fixtures and statistics in real time.

Stand Alone Static Website

A Stand Alone Static Website is defined as a website that is not linked to any existing statistical website; however it is rarely changed or modified. This website is basically an electronic brochure for the club and is mainly used as a promotional tool to attract new members and promote the clubs sponsors. An advantage of this website is that the club can have a website presence that does not need to be continually maintained. This website essentially becomes an electronic brochure. The disadvantage of this website is that it is not current and cannot be referred to as a central portal for information about club events. As it is a standalone website, it will not show any of the ladders, fixtures, match results or player statistics.

Integrated Dynamic Website

An Integrated Dynamic Website is defined as a website that is linked to an existing online statistical website that is continually changed by a representative of the club. This website is generally hosted on a statistical website and is set up using a template. The advantage of this arrangement is having access to player statistics, match results, ladders (standings) and fixtures updated automatically and having all of the club announcements in the one central location. Like the Stand Alone Dynamic website, the challenge that clubs face is having the expertise to implement and maintain the website.

Integrated Static Website

An Integrated Static Website is defined as a website that is linked to an existing statistical website; however it is rarely changed or modified. Generally, the only significant modification to this website is the player and match day information that it is linked too. This website, much like the Stand Alone Static Website, acts like an electronic brochure for the club, but in addition provides access to up-to-date statistics.

Table 74 outlines the types of features that should be on each of the category of website.

Table 74 - Types and Features of a Club Website

	Stand Alone	Integrated
Static	-Contact Names -Contact information (email address, telephone numbers) -Location	-Contact Names -Contact information (email address, telephone numbers) -Location -Statistics (fixtures, ladders, player statistics)
Dynamic	-Contact Names -Contact information (email address, telephone numbers) -Location -News -Events	-Contact Names -Contact information (email address, telephone numbers) -Location -News -Events -Statistics (fixtures, ladders, player statistics)

Association Website

This Website is beyond the control of the clubs and is updated by an association. For this website to work efficiently, a representative of the club must check it regularly. This task should be the Secretaries, as they are the representatives of the clubs when dealing with an association.

Online Statistics

Implementing an Online Statistics Package is an important decision for a club, if this option is not available from an association. The association needs to be in control of this Internet application. In the associations that were investigated all had access to a free online statistics package. As for the clubs, the interviews showed that, when they 'go it alone', the managerial direction is missing and it fails. The other alternative for a club that is in an association that does not use an online statistical program is to purchase a statistical program. This program may or may not have an Internet component. Another alternative is to setup spreadsheets to record the information. However, if you are part of an Association that has adopted an online statistical package, the club must appoint a representative (like the secretary or the captain), to enter the player statistics and match results. Usually with smaller clubs (with less than five teams), the Secretary should be in charge of this task. However, with the larger clubs, it is preferred to use the captains to enter the data at the end of each day's play. Some clubs have a dedicated computer at the clubrooms and the scores can be entered immediately at the end of play. The researcher's experience suggests this investment for a club is extravagant and not needed. Usually the Association will require the results entered into the system within the days following the conclusion of a match. So, entering the results on a personal computer or work computer may be the preferred option on most occasions.

This is one of the main differences between the types of sports, not only in the amount of statistics required for each sport, but the method of how they are reported. The method cricket employs is the use of Club Secretaries to enter in the match results and player statistics. Whereas, the Other Sports use umpires for this task. As both of the hockey and soccer associations have adopted a third party system, this seems to be the best practice.

Outsourcing Administration

From the 87 clubs that were surveyed, only one of them had their administration outsourced to a business. The business, for a fee, acted as the administration arm of the Club. They managed the Association requirements, the local council requirement (such as ground allocations), maintained the website and undertook communication to the members. The system worked by having a representative from the Club advising the business on their requirements. Depending on the business model, this could become an expensive option. However, this does give a Club an option if no-one within the Club is willing to undertake any administration roles.

The Association

The association committee runs much in the same way as a club committee. They have to communicate with their members (the sporting clubs), the council and to the governing bodies. In the digital age, there are more communication options then there were 20 or 30 years ago. Presented are the 'ideal' setup and procedures the association can undertake with these four Internet applications.

Email

The process of sending email from the association to the club secretaries is an improvement on the earlier system of telephoning them individually or sending out letters to the clubs. However, the association works much the same as an executive committee at a Club. The two main uses of email for the association are communication within the association and from the association to the clubs via their Club Secretary.

Communication from within the Association

The use of email within members of the Association's committee is much the same as the email use at Club level. There are a similar number of executive members at the Association level as there are at a Club level. Email is perfect as a first port of communications, as members can send it to a number of people at once, have a discussion about an issue amongst a group of people and it also provides a paper trail for the Association to cover its own actions.

Communication from Association to the Clubs

This level of communication should be undertaken via email as well. When communicating from the associations to the clubs, a paper trail is vital. There were two instances highlighted in the study where email was used from an association to a club. The first instance involved generally bulk emails to all clubs about announcements and reminders. The second instance was for communication between an individual club and the association, for example, decisions handed down to the Clubs. However, one of the issues that might arise here is to whether an association sends the emails to a club email address, or an individual's work or personal address. On one hand, if the Association does send it to individuals they will probably receive the email, but only if they check their email

Club Website

This feature is not really appropriate for the Association section. However, one way for an association to assist clubs with this is to give them some information on tools available for implementing a club website during a delegates meeting.

Association Website

This Internet communication can be a powerful tool for an Association to convey information to clubs. As the Association does not have frequent contact with their clubs, compared to how a secretary might have contact with his/her members a couple of times a week. However, for this tool to be effective, it needs continued updating and maintenance. This tool must have Association contact details, news and information (such as the dates of delegates meetings) and access to fixtures and standings. However this website, much like the club websites, can be integrated into the online statistics program. This will be discussed further in this chapter.

From the data that has been collected through the interviews, there seems to be a distinction between having a standalone Association website and having an integrated website with the national online statistical package. The researcher feels this problem will be worked out in time with new updates. He can see the evolution of the National Online Statistic package to be more than online statistics. This was one on the remarks during the HCPCL interviews where Club 2 were after a business

administration package that kept statistics as well. The most ideal area for an association to house their website is on the National Online Statistical package. The association can have all of their information, news, email, fixtures and ladders all integrated onto their website with the help of this National Online Statistic Package. However once there is an area for clubs and association to house a website for free, the associations will be keeping their stand alone websites.

Online Statistics

This Internet application allows the most efficiency gains for sporting associations. An Association cannot afford to have this kind of system built for them. The two options that Associations can explore are a paid third party system, or introduce the National or State governing body's version. The interviews have shown that when the state governing body controls the online Statistics system, there are problems with it. These may include poor usability and limited functionality. When a national governing body takes control more resources that can be invested into the project. According to the interviews, this method of investment has seen better results. There is no doubt that having computers process the Association's statistics saves hundreds of hours in volunteer time. Therefore if the Association has chosen a system, be it either a third party system, or a governing body alternative, the question they must ask themselves is that "will this save us time and make it easier for us in the long run?'.

This is the Internet innovation that separated the two types of sports. The implementation of this application for the Other Sports was much easier to implement than for Cricket. The two 'Other Sport' Associations have adopted a Third Party system which included an integrated Association and Club Website and an Online Statistics package. The Other Sports have the 'ideal' setup and for new Associations implicated in a simple scoring sport, this method should be followed.

Third Party Website

The use of a third party online statistics system can be a difficult adoption decision for many Associations. Without the option of an effective and efficient free alternative, a third party system may be the only option for Associations. However, this can be an expensive alternative, with most third party systems charging on a 'per team' basis Paying to have all of the statistics processed online will save hundreds of hours for the volunteers.

Governing Body

This aspect may be out of the Clubs and Associations control. Generally the national, or even state, may have their own online statistical program. However, there seems to be a theme that when a state administers their own online statistics package, it is generally very simple and lacks features. This was seen in New Zealand Association where only the match scores where entered and not the player's statistics.

The State and National Governing Body

State and national governing bodies are entrusted to ensure the sport develops. These organisations generally have two foci, being successful at their highest (usually international) level and developing at the 'grass roots' level. Presented are the 'ideal' setup and procedures that the state and national governing bodies can undertake with these four Internet applications.

Communication from the State/National Body to the Club

The researcher believes the best way for a governing body with communicate to their Clubs is through their Associations and trusting the communications are passed. However, this does not mean that the governing bodies cannot communicate with the club. This is accomplished through mass emails to the

clubs (or the club's representative) notifying them of their procedures, new innovations, grant information and philosophies.

Club Website

The governing bodies view the club websites as a promotional tool for clubs to attract new members and add value for the sponsors. Therefore, the governing body should be encouraging clubs to adopt a website, even if it is only an electronic brochure with the name and contact details of the club. They should encourage clubs to adopt these Websites by offering support and making the implementation of the websites an easy process.

Association Website

An Association website is an incredibility powerful tool for an Association to convey information to their Clubs. The governing bodies need to recognise this and in turn support the Associations with this Internet application. The easily way for a governing body to give assistance to these associations, is to build a template for the website as part of their Online Statistics package. This way they have access to all of the player's information, like which players need clearances and which players need to be registered. Another advantage of having a integrated website is that all of the fixtures and ladders are located in one central location.

Online Statistics

All of the associations that were investigated had access to a national, free online statistical program. However, the data collection showed that across the three countries there were different levels of maturity. The English system was three to four years more advanced than the Australian one, which was two years more advanced than the New Zealand one. The advantage of the Governing body taking charge of this aspect is that they will generally have more money and resources to help make the project a greater success. If an association has access to a free online statistics package which processes match results, as well as player statistics, they should implement it. During the interviews, there were comments within the Colac Cricket Association indicating that the club delegates wanted the association to implement MyCricket. This was a stark contrast to the North Metro Association which had enjoyed the benefits of the system for a number of years, but were located only a two hour drive away!

Online Administration Heart

This next stage of Cricket administration and what should be an important element of Cricket's governing bodies, is what the researcher refers to as the Online Administration Heart. This has been referred to in this chapter as an integrated online statistical package; however, it is a one stop website for Club and Association administration.

This idea has came from HCPCL interviews where Club 2 that encompasses ten senior teams (about 100 players) and oversee about 220 juniors in schools (plus their parents). They were after a Human Resource Management system to organise and coordinate this high numbers of volunteers, and make their administration roles more about overseeing Cricket, and less about paperwork. Some of these clubs can be considered medium sized organisations, however, they do not generally use sophisticated software to manage their operations. Imagine how a medium, or even large, sized business would function without any formal human resource management (HRM) software. These Clubs can use HRM software, however it will not be integrated with the sporting side of the organisation.

This concept of a total software package has been evolving in the PlayCricket system (in England) and the MyCricket system (in Australia) which were more advanced than the NZOnline system (in

New Zealand). The advances that have been made in these systems are mainly a player database, but the use of HRM type of functionally would be a significant breakthrough.

11.5.3 Unwanted Attention

The promotion of the Clubs on the Internet, either through their own website or a directory, can be beneficial for attracting players. However, with this contact information so readily available, businesses that service the needs of sporting clubs may see this as an opportunity to contact the club representatives directly. These businesses might include trophy and uniform makers, travel providers and equipment vendors. This may become an issue for Clubs that have their details available online. The literature suggests that prior to the commercialisation of the Internet in the mid 1990s, the Spam problem was quite limited. Unsolicited messages mostly consist of prankster and chain letters (Cranor & LaMacchia, 1998). In February 2004, unsolicited commercial emails made up about two thirds of all messages, as compared to 7% two years earlier (New Media Age, 2004). It will be interesting to see in the future if this becomes a problem for sporting clubs.

11.6 The Future

When this thesis commenced, there was always the possibility for new technologies and Internet applications having a bearing on the current established technologies and applications. Some of the existing and emerging technologies and applications are discussed in this section.

11.6.1 The Internet Applications Tested

After a complete analysis of Email, Club Website, Association or Third Party Website and Online Statistics within sporting Associations and Clubs, the researcher believes there are a number of trends that will emerge.

Email

The data collection from six Associations has shown that, email was the innovation that had been adopted for the longest amount of time (an average of six and a half years). Email has made communicating between members of local sporting organisations more efficient. The researcher suggests communication will continue with the use of email. However, it will only be between the executive committees of the clubs and from the club's executive committee to its Association. The communication from the club's executive committee to its players will be achieved via SMS texting. Mobile phones have become more pervasive an email within sporting clubs. Local clubs will see a greater benefit to using SMS in preference to emails.

Club Website

The researcher believes this innovation is about to be significantly enhanced with the introduction of Online Statistical packages, like MyCricket, NZOnline, PlayCricket and Results Vault. The researcher believes cricket will follow the lead of simple scoring sports and have one application which covers communication (like email), a Club website, an Association website and online statistics. As this convergence continues in cricket, club website adoption may grow .

Association Website

The results from the surveys showed that the Association's website was the second oldest innovation that was adopted. Its primary use was to disseminate information to clubs from associations. The researcher believes this role of the Association Website will change little over time. One thing that might change is the dependence that the clubs have on the website. The Clubs will use the website more to access information more and more over time. The researcher believes the dependence on the Association's website by the Clubs will only grow.

Online Statistics

Statistics have been recorded and analysed in all sports. However with computers and the Internet, this processing, access to these statistics have become better, faster and more meaningful. The researcher believes that this advancement will only grow and move further into the mainstream with access to mobile technologies. This includes applications for entering statistics on smart phones and tablets, either live, or straight after the game.

11.6.2 Emerging Applications

This section highlights some of these technologies and discusses how they might affect sporting bodies in the future.

Social Networking Websites

Facebook® is the world's largest social network, where members create their own profiles and interact with friends. Twitter® is a microblogging website where members broadcast a short message (only 140 characters) to their followers (generally their friends) and their followers can reply to the message.

The researcher believes that Facebook® will become an application that sporting associations and clubs can potentially use as a channel to diffuse information. However, with this application, the problem will be how the clubs use them with or without having a Club Website to complement them. Firstly, sporting clubs will have to identify the 'best' method of disseminating information to the members, particularly ones that do not regularly visit the clubrooms. If Facebook® is identified as the 'best' method, then Clubs will need to set up a group and be very vigilant with comments posted from their members. One disadvantage of Facebook® is that you must have an account and check it regularly. Clubs cannot rely on members to do this, otherwise they will repeat the problems of email. If a club has implemented a Facebook® group, it should use it to compliment their information disseminating with their website and SMS texting. However, unlike their Club website, Facebook® can be used to send private messages to members.

Twitter® on the other hand, requires members to have an account (and check it regularly). However, Twitter® gives a club less functionality than Facebook®, by providing only the ability to send announcements to Twitter® 'followers'.

The research has discussed having all of the administration process integrated into an online hub. However, it may prove difficult to totally integrate Facebook® and Twitter® into one 'all inclusive' system. Therefore, administrator will, at least in the near future, have to update both systems.

Mobile Phone Applications

Applications on 'smart phones' are becoming more widespread. The researcher believes these will become common place for volunteers in the not too distant future. The most common use for them will be as an add-on for inputting and accessing online match results and player statistics during match day. At the moment, these are entered through an Internet browser. However, to make this process easier, an 'app' may be developed so the volunteers can enter them via their smart phone at any location. This added software will not be mandatory, as you cannot force people to buy smart phones, but could be used to increase access to online statistical packages.

Tablet and Mobile Computers

Tablet computing is a recent innovation and will have an impact on sporting bodies. The researcher believes that in the near future tablet computing will not have a significant impact on local sporting bodies. Cricket may have a use for them as an electronic scorecard. The idea of entering the outcome

of every delivery on a tablet and then having the Online Statistical package update in real time may seem an excellent efficiency gain with the scores only being recorded once and validated at every delivery. However, this system will not suit cricket. There are two major hurdles that currently stop this technology adoption. Firstly, the length of time for a day's play, (generally around five hours) and required battery power will be an issue (especially when most grounds do not have direct access to power). The other is software failure and a scorebook will never crash and lose its data. What would happen if a fatal software error happened and the records of a whole day's play were lost? Or a team was losing and decided to 'turn the tablets off' and blame a software error. These are issues that are currently too great to be overcome.

However, if we think of the computing world in 3-5 years time, tablet computers will have extraordinary battery life (which can operate all day without a recharge) and the match results and player statistics could be storied using cloud computing. Up to date match results and player statistics will be captured in real time and the risk of computer failure will be almost zero. The means to do this almost exists today, however it may only be limited to very short games, such as junior games and be seen as the exception to the norm.

With the Other sports, the scores are entered into the system by the umpires and not the Clubs and therefore cannot be entered in real time.

11.6.3 Future Research

As a research area, the adoption of the Internet in sporting bodies is not a heavily researched area, despite the number of people it could affect. However, listed is some of the future research that could be investigated after this thesis is complete.

The Online Administration Heart is an area of important future research that the researcher is keen to undertake. This concept notes the evolving nature of the current online statistics package and adding an online HRM component. This will not only support the sporting activities of the organisation, but also the business process of these Clubs.

Another area of future research is the generalisability of the research framework. The research framework illustrates the adoption of technology within sporting bodies. However, these sporting bodies are a branch of a larger group of organisations called Community Base Organisations (CBOs). These CBOs generally have the same type of stakeholders as sporting clubs. They will have the same influences at a Individual, Organisation and Institutional. Future research could examine the adoption of Internet applications in CBOs in general.

11.6.4 Limitations of the Study

As this research project interacted with people, and handled data that was not in the public domain, the researcher had to gain ethics approval came from the Committee of Victoria University Human Research Ethics Committee. This was achieved at the end of 2007.

When arranging interviews with clubs, the process was random and generally relied on the willingness of the club delegates supplying their details for interviewing. However, as this was reliant on club representatives donating their time, it was possible that only the more highly developed clubs who were after extra information about how to make their clubs better wanted to be involved. Therefore, some of the less developed clubs (probably in a technological instance) may have felt less compelled to be involved in the process. The researcher tried to overcome this limitation by interviewing a number of club delegates different clubs in each association.

Another limitation was not receiving a survey from all of the clubs in the association. Although the return rate was quite high, the surveys that were not returned did cause some minor inconsistencies with the results. This was shown in the Auckland data, when the survey results returned 100% of club adopting a club's website. However, two of the clubs interviewed did not have a club website. When the researcher asked one club about this, the club delegate replied that he did not fill out a survey. To reduce the effects of this limitation, the researcher collected data from multiple associations.

Another possible limitation was having the results generated in one region. This is a limitation as the main drivers and barriers may only isolated to one association, and may not be generalisable. This problem was reduced by collecting data in metropolitan and rural areas, and from Australia, New Zealand, and England.

The last main limitation was the type of sport, and not being able to generalise the results to other sports. This is a limitation as one sport might have a governing body willing to invest in complex Internet applications, and another advocating the use of a third party system. Therefore, the influences might be different. This was reduced by collecting data from three different sports.

11.7 Summary

This chapter revised the primary research questions and discussed the practical implications for the sporting bodies. The aim of this thesis was to ascertain the Internet applications that are being adopted within local sporting clubs and to identify the adoption factors that affect both **local sporting Associations** and their **Clubs**. This study has developed a research framework which has addressed the research questions:

- What are the areas where Internet applications are being employed (Research Question 1);
- What are the factors that drive the adoption of these Internet applications (Research Question 2); and
- What impact do these Internet applications have on the local sporting club and its members (Research Question 3).

These applications, drivers and impacts were incorporated into a framework of Internet adoption for local sporting clubs. Rogers' (2003) Innovation-Decision Process provided to be very useful in describing some of the factors that contributed to innovation adoption process. The Rogers' (2003) Innovation-Decision process was used as the general framework, which was modified for the study.

This chapter has shown the levels of adoption throughout the sporting Associations that were analysed. The use of the survey to test the levels of adoption provided data that identified to what extent associations were using these Internet applications. The chapter then described the factors that affected adoption of these Internet applications within sporting clubs. This was the section that outlined the factors that drove and hindered, the adoption of these Internet applications and relied upon a series of in-depth interviews with local sporting club committee members.

Following this was a guide for Clubs and Associations (in both types of sports) to setup and maintain each of the four Internet applications in an efficient and effective manner. The chapter then concluded with the use of technologies of the future and how they might shape sporting associations and clubs.

12 Appendix One – The Survey and Interview Templates

12.1 Survey Template

Figure 64, Figure 65, Figure 66, Figure 67, Figure 68 were the surveys that were handed out to the subjects.

A Model for Internet Adoption for Local Sporting Bodies

Instructions

Please read following questions and select an appropriate answer by circling the **single, most appropriate** response. Please note that some questions request some extra information.

Once you have finished, please hand the survey back to person that handed it out.

Demographic questions

This section covers questions to obtain general information about your organisation.

1) What is your role within your club? (circle more than one if applicable)

a. President;
b. Vice-President;
c. Secretary;
d. Treasurer;
e. Coach;
f. Committee Member;
g. Player;
h. Others, specify:_____

2) What is your gender?

a. Male
b. Female

3) How many teams does your club have in this Association?

a. Seniors - _____
b. Juniors - _____

4) Approximately how long has your club been in operation?

_____ years

Figure 64 - Demographic Questions of the Survey

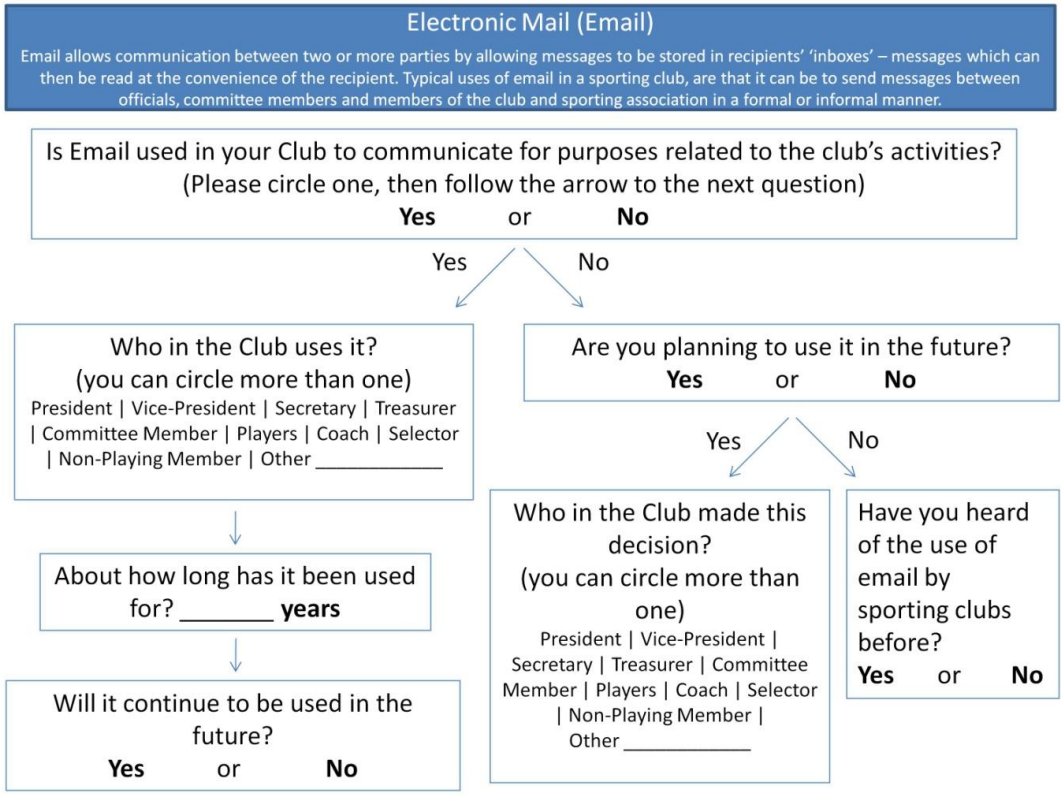


Figure 65 - Email Survey Questions

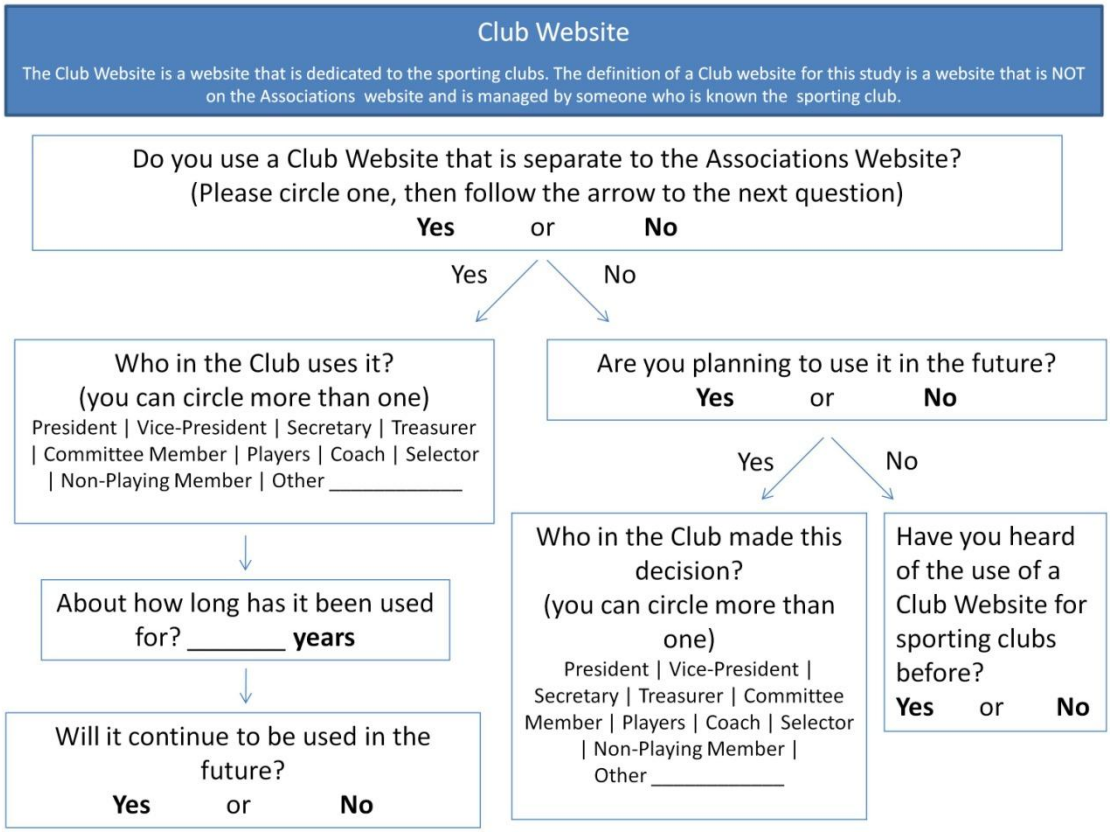


Figure 66 - Club Website Survey Questions

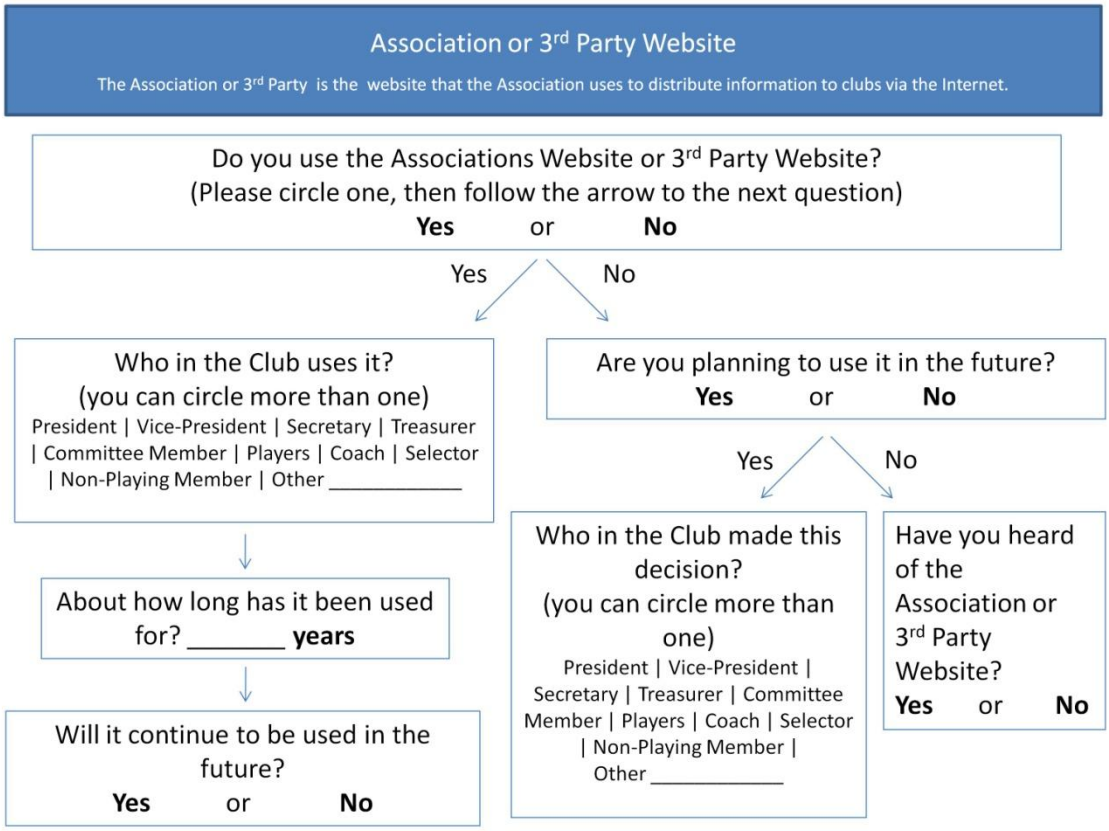


Figure 67 - Association or Third Part Website Survey Questions

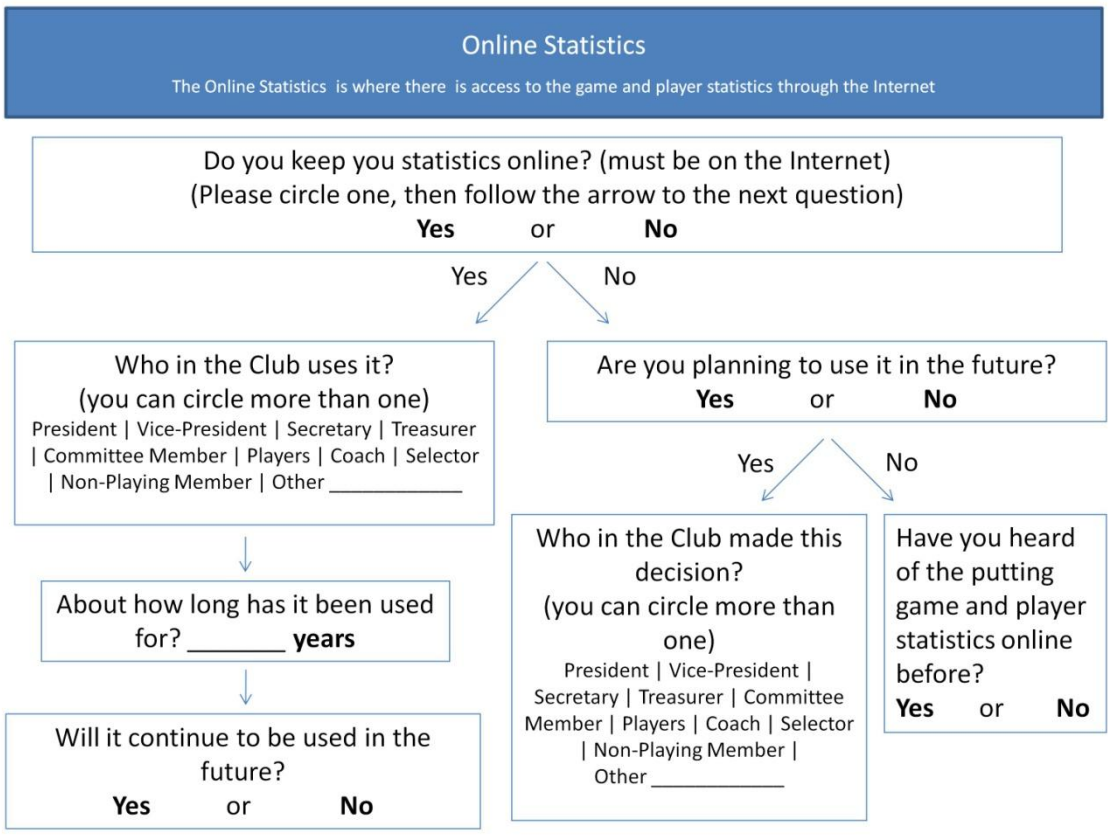


Figure 68 - Online Statistics Survey Questions

12.2 Interview Templates

Figure 69, Figure 70, Figure 71 were the interview templates

Association Name:

Club Name:

Name of Interviewee:

Date of Interview:

Demographic Questions

1. What is your age range?

2. What is your occupation?

3. How familiar are you with the following information and communications technology terms? Internet, Standard desktop applications (like MS Office), Blogs, Networking, Gigabyte

4. What is your role in the club?

Do you use any of the following?

- Internet Communications Applications
- Club Website
- Association or Third Party Website
- Dealing with Game Statistics

Figure 69 - Page 1 of the Interview sheet

Innovation:
1. Were you involved in the set up of [*the innovation]*? Do you use [*the innovation*]? Who in the club does use it?
2. What do [you/ the users] use [the innovation] for?
3. How did [you/ the users] find out about [the innovation]?
4. What benefits does [the innovation] provide? How does using [the innovation] compare to how [you/the users] previously [performed the task]]?
5. Did [you/ the users] have to change the way [you/ they] [performed the task] after adopting [the innovation]? If so, what changes did [you/they] have to make?

Figure 70 - Page 2 of the Interview sheet

6. How difficult was it for [*you/ the* users] to understand and use [*the innovation]*?

7. Did [*you/ the users*] have the chance to try out [*the innovation*] before it was adopted? When/ where?

8. Did [*you/ the users]* see [*the innovation*] in operation before it was adopted?

9. Were you involved in the decision to adopt [*the innovation*]? If so, what factors lead to these decisions?

10. If you had the choice, would you continue to use [*the innovation*] in the future? Why?

Figure 71 - Page 3 of the Interview sheet

13 Appendix Two – Published Work from this Thesis

13.1 Publications Resulting From this Thesis

Bingley, S., Burgess, S., & Sellitto, C. (2011). Website adoption by local sporting bodies in Australia and New Zealand. *Pacific-Asia Conference on Information Systems*, Brisbane, Australia.

Local sporting clubs rely heavily on volunteers to run and manage their everyday activities. *Some clubs are turning to Internet technologies, such as club websites, to assist them in carrying out these functions. However, little is known about the effect that the adoption of these websites has on these clubs. Community organisations such as sporting clubs often face difficulties in regards to the use of many information and communications technologies, with low adoption levels. Using Rogers' (2003) innovation-decision process as a guiding framework, this study examined five sporting associations in Australia and New Zealand with respect to their website adoption using a combination of surveys and interviews. The results show diverse levels of website adoption by local sporting clubs across different sporting associations. Some of these differences occur in relation to the influence that institutions (such as sporting associations and peak bodies) have over club decision making, but in other instances adoption decisions are made within the club by members and stakeholders. The most common reason for non-adoption was a lack of expertise. Lack of time was mentioned by a few interviewees but was not prominent. Cost was not mentioned as an inhibitor. In relation to benefits, the club website provided a means of communication of information from the club to its members and the chance to market to potential members. Also, the website could be used as a means to present current match results and player statistics.*

Bingley, S., & Burgess, S. (2011). A case analysis of the adoption of Internet applications by local sporting bodies in New Zealand. *International Journal of Information Management*, **forthcoming.**

Local sporting clubs are typically run by volunteers who carry out the administrative roles of the club. Using Rogers' (2003) innovation-decision process, this article examines the extent to which sporting clubs use various Internet applications for these functions and the factors that affect their adoption through examining the activities of a hockey association in New Zealand. Whilst all of the clubs had adopted email in some form, around half of the clubs had their own website and used online statistics. There were a number of differences in the adoption factors for each application that could be attributed to the nature of the innovation, the perceived attributes of the innovation and the source of knowledge of the applications. In the case of the adoption of email and club websites, the primary force behind the adoption decisions were individuals within the clubs. In the case of online statistics, the main driver for this adoption was the sporting association.

Bingley, S., & Burgess, S. (2010). A framework for Internet adoption in sporting bodies: A local New Zealand sporting association example. *ISociety*, London.

Sport at a local, or social level, requires volunteers to support the needs of sporting associations and their participating clubs. Research has shown that volunteers and associations are starting to adopt the Internet to assist in the administration of their clubs and their association. This study uses Rogers' Innovation-decision process as a framework to identify how this process of adoption is occurring. The researchers have applied this framework to investigate how this is occurring in a cricket association in Auckland, New Zealand.

Bingley, S., Burgess, S., & Sellitto, C. (2009) An innovation diffusion approach to the adoption of mobile applications in local sporting bodies. *8Th Global Mobility Roundtable,* Cairo, Egypt.

Using the Rogers' (2005) Innovation-decision process as a basis, this paper describes the use of mobile applications in local sporting clubs and associations from initial knowledge of the application, through the decision to adopt and eventual confirmation of the usefulness of the application by continuance or discontinuance of its use. As local sporting clubs and associations are part of a larger group known as community based organisations and are predominantly run by volunteers, literature related to Internet application use by these groups is discussed. The use of mobile technologies in this field has been diffused in some areas, mostly for communication from sporting clubs to their members. However other mobile applications are just now being introduced, such as entering match scores online through the use of mobile broadband devices.

Bingley, S., & Burgess, S. (2009). A framework for the adoption of the Internet in local sporting bodies: A local sporting association example. In N. Pope, K. L. Kuhn & J. J. H. Forster (Eds.), *Digital sport for performance enhancement and competitive evolution: Intelligent gaming technologies* (pp. 212-227). Hershey, PA: IGI Global.

Sport plays a major part in the Australian psyche with millions of people participating every year. However organised sport, at the local or social level, in Australia relies on volunteers to support the needs of associations and their clubs. There is evidence that Internet applications are being adopted by these associations for administration purposes, however how are these being adopted, what are they using and what is the effect on the associations and their volunteers? With using the Rogers' (2005) Innovation-decision process as a framework, the research aims are to trace the adoption of Internet applications from initial knowledge of the application, through the decision to adopt and confirmation by continuance or discontinuance of their use. Some of the examples of the Internet applications that have been adoption are online match results and player statistics applications. Local sporting associations illustrate how the framework may be applied in a practical situation to represent the adoption of Internet technologies.

Bingley, S., & Burgess, S. (2008). A framework for the adoption of the Internet in local sporting bodies in Australia: A diffusion approach. *ISOneWorld Proceedings*, Las Vegas, NV.

Millions of people participate actively in the sporting clubs of local communities throughout Australia. These participants are supported by volunteers that provide structure to their activities by assisting with club administration functions, such as player registration, fund raising activities and so forth. Recently, there is evidence that Internet technologies are being used in various ways to support these activities. This paper discusses the factors that may influence the adoption of Internet in local sporting clubs and introduces a framework, based around Rogers' (2005) Innovation-Decision Process, that can track the process of adoption of these applications from initial knowledge about their existence through to their impact in local sporting clubs.

13.2 Publications Involving Associated Work

Bingley, S., & Burgess, S. (2011). Using I-D maps to represent the adoption of Internet applications by local cricket clubs. In A. Tatnall (Ed.), *Actor-network theory and technology innovation: Advancements and new concepts* (pp. 80-94). Hershey, PA: IGI Global.

This chapter describes the development of a visual aid to depict the manner in which Internet applications are being diffused through local sporting associations. Rogers' (2003) Innovation-Decision process stages, specifically the knowledge, persuasion, adoption and confirmation stages, are used as the theoretical basis for the aid. The chapter discusses the Innovation-Decision process as an important component of Rogers' (2003) Innovation Diffusion approach. It then outlines the particular problem at hand, determining how best to represent different sporting (cricket) associations and their adoption and use of Internet applications across the innovation-decision process stages. Different data visualisation approaches to representing the data (such as line graphs and bar charts) are discussed, with the introduction of an aid (labelled I-D maps) used to represent the adoption of different Internet applications by cricket associations in New Zealand, Australia and the UK. The Internet applications considered are email, club websites, association and/or third party websites and the use of the Internet to record online statistics. The use of I-D maps provides instant interpretation of the different levels of adoption of Internet applications by different cricket associations.

Bingley, S., & Burgess, S. (2009). Using data visualisation to represent stages of the innovation-decision process. *International Journal of Actor-Network Theory and Technological Innovation*, *1*(2), 13-30.

This article describes the development of a visual aid to depict the manner in which Internet applications are being diffused through local sporting associations. Rogers' (2003) Innovation-Decision process categories are used as the theoretical basis for the aid. The paper discusses the Innovation-Decision process as an important component of Rogers' (2003) Innovation Diffusion approach. It then outlines the particular problem at hand, determining how best to represent different sporting associations and the adoption and use of Internet applications. To this end, different data visualisation approaches to representing the data are investigated, with the introduction of an aid the authors have labelled I-D maps used to represent the adoption of these applications by sporting associations. This paper demonstrates how, when compared with the other methods of visual presentations (such as line and bar graphs), the I-D Mapping method shows a more descriptive visual of presentation when used with real world data.

Bingley, S., & Burgess, S. (2008). I-D maps and the innovation-decision process. In B. Lloyd-Walker, S. Burgess, K. Manning & A. Tatnall (Eds.), *The new 21st century workplace* (pp. 59-74). Melbourne, Australia: Heidelberg Press.

This chapter describes the development of a visual aid ('Innovation-Decision maps', or I-D maps) to depict the manner in which Internet applications are diffused through local sporting associations. Rogers' (2003) Innovation-Decision process categories are used as the theoretical basis for the aid. The chapter discusses the Innovation-Decision process and then outlines the particular problem at hand, determining how best to represent different sporting associations and the adoption and use of Internet applications in a simplified manner to allow direct comparisons. To this end, different data visualisation approaches to representing the data are investigated, with the introduction of an aid the authors have labelled as I-D maps used to represent the adoption of these applications by sporting associations. This chapter demonstrates how, when compared with the other methods of visual presentations (such as line and bar graphs), the I-D Mapping method is superior.

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